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HANDBOOK OF ARCHITECTURE

Part II

ARCHITECTURAL STYLES

Volume 4

ROMANESQUE AND GOTHIC

Part 2

HOUSE ARCHITECTURE

By Professor Otto Scharoun

Second Edition

Leipzig

1908

UNIVERSITY OF CHICAGO PRESS
CHICAGO, ILL.

Translated by W. Clifford Rickert, D. Arch.

Professor of Architecture

UNIVERSITY OF ARCHITECTURE

Urban. Ill.

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The treatment of the medieval house by A. von Sassewein as given in the first edition of this book found an extraordinary advance for its time, and it was a very important achievement in the history of art. It presented for the first time a connected description and a comprehensive point of view for an extended domain, whose treatment had previously been limited to widely scattered separate essays, and in the best of cases to the difficulties of the study caused by the unfavorable putting together of such word collections, too much like a dictionary. The initiative force was therefore extremely great. But the study of secular architectural works has since not with increased force, nourished by the increasing understanding of the high value of what these national branches of art have left behind for us in their works. By extended individual activity, the mass of observed materials has been extraordinarily increased; new combinations of ideas have appeared, and new basal views of a partly historical and partly artistic kind make themselves felt as deeply penetrating. Thus in the preparation of this new edition it was no longer possible to adapt the work of Sassewein by a thorough revision; there must rather appear in its place an entirely new treatment. The high appreciation due the first author is thereby afforded opportunity, that at least certain suitable portions should, unchanged if possible, be arranged in the description, and in part of all, the fresh description of the Nuremberg merchant's house (p. 181-183) and the chapter on house chapels, complete in itself. In a work, that takes as its aim the compression of a widely branched realm of knowledge into narrow space, it is unavoidable, that the typical and commonly occurring must be emphasized first of all, in order to clearly set forth the great course of development. By this necessity it must then be taken, that what is thus given as a rule does not coincide with every separate case of such variable phenomena, since a domain treated by itself chiefly represents the development of the medieval city life. For well-weighed reasons, I have adhered to the previously expressed views in my book on "Das Deutsche Rathaus

VII Preface to the Second Edition.

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VIII des Mittelalters" (Berlin, 1905), that the city carrying on both agriculture and commerce is the determining form of settlement for the shaping of the citizen's dwelling. Opposed to the objections made to this are briefly added notes made to the sections concerned, that also the history of the cities founded as purely "market settlements" appear to me to enforce the law, that in the middle ages the permanent welfare of a community could only be ensured by the useful possession of ground and soil. For these settlements have later universally acquired possession of farming land, that perhaps was originally lacking; thus many of them have in this manner become purely agricultural cities. Since moreover the existence of these numerically much inferior cities permit the recognition of no peculiarities, then we cannot attribute to the earliest form of their condition any great importance for our description.

Let it be added finally, that this work was composed in its general part in December, 1906. Some valuable novelties of the last year have been utilized as far as possible during the printing.

Berlin-Steglitz. February. 1908.

O. Stiehl.

HANDBOOK OF ARCHITECTURE.

1

ROMANESQUE AND GOTHIC ARCHITECTURE.

B. HOUSE ARCHITECTURE.

By Otto Stiehl.

Introduction.

a. General.

1. Predominance of Germanic Influences.

The house architecture of western Europe during the middle ages, like the entire civilization of that time, is based on a concurrence of very different influences. First of all is it determined by the naturally very slight basis, that the freshly natural peoples of Germany brought with them from their forest homes, fused with the results of the highly refined and even overripe antique civilization, that was itself likewise composed of quite polyform parts. The rich and in its way perfected development of the antique dwelling appears at the first glance to surpass infinitely the conditions of Germanic existence. But in relation to the entirely different views, that the new masters of the world brought with them, these played only a more subordinate part. Naturally the mixture of the different influences mentioned above did not occur in the same manner everywhere. Whether in the great changes of the migrations of peoples, remains of the ancient population were preserved in important locations, or whether under the new role their art was more fully lost, then is the final result of their architectural fusion very different. But one can fully determine, that in the countries leading in politics as in architecture -- these are primarily the countries north of the Alps as well as upper Italy -- the influence of Germanic life far predominates in the treatment of house architecture.

Infinitely much, that city civilization had apparently acquired forever, was destroyed by fire and sword during the continuous periods of war; the loosening of all connections of the states produced such insecurity for life and property, that a also the conditions for the restoration of the destroyed structures did not exist. If one takes into consideration, that al-

already in the time of the failing Roman government, the unbearable pressure of taxes, misery and disturbances had oppressed the lands of earlier civilization, then it is not surprising, that also the basis of permanent tradition, the practice of the national art of living, were completely lost in the disturbances of the national migrations, and that only miserable remains were retained in the new period. It was substantially in manual capabilities, particularly the art of building stone houses and of constructing vaults, in which southern civilization remained to the northern peoples; and even for these, men often had infrequent use, since men generally held fast to wooden construction, which was from ancient times customary there. On the development of existence antique tradition lost its influence for centuries, in a much higher degree than for church architecture. Only in later times the remains of antique architectural styles existing in the South, at least in relation to technical skill, again powerfully influenced the mode of living of the northern peoples, after the general arrangement of the dwellings among them had already fully developed into fixed principles.

How strong this dominance of the Germanic spirit was, we may perhaps most clearly estimate by this, that even an arrangement so completely based on an oriental basis as the monastic life, soon after its penetration into southern and western Europe was imbued with Germanic ideas of community life, and its entire nature was transformed. And again on the other hand, that led to this, that by monastic influence in the countries apparently far removed from Germanic existence, the architectural customs derived from archaic German national customs were interwoven with the trains of thought transmitted from the antique. It is therefore necessary for understanding the latest development, before we enter into the description of the mediaeval dwelling in a narrower sense, to obtain a clear idea of the original forms and grounds, which the Germans brought with them at their entrance into the world history. They are entirely of a very plain kind and lead us back to the basal conditions, under which men generally proceed to house architecture. Just by their simplicity and capability of development has their influence remained in force until in the latest

time of the middle ages, and they have thus retained such great importance for mediaeval architecture.

b. Primary Requirements.

2. Origin of the Need of Dwellings.

It can scarcely be doubtful, that the earliest need of a dwelling for mankind everywhere sprang from the endeavor to protect itself from hostile forces. While the earth still offered apparently infinite space, over which scarce mankind could distribute itself, could win life and subsistence, without being disturbed, and we must understand by these hostile forces indeed more the injuries by weather, heat, cold and wet, as well as the dangers threatened by wild beasts, than by men with hostile intentions. For under these conditions, as we find them at the earliest beginnings of all civilization, there is yet lacking the opportunity of endeavors, and also the comprehensive subdivision of classes with different aims, which form the primary requirements of human enmities. Only after a struggle had commenced for the space on earth then became too small, and for which civilization had created a certain value, that attracted the cupidity of the adjacent neighbors, and for the dangers of surprise and robbery promised a remuneration, could the necessity occur for taking into permanent consideration the defense against attacks by men. But even then the necessary ability of self defense was not always sought in the plans of dwellings, but powerful faces then also long placed their trust in the living walls, which were formed of the bodies of brave warriors about house and hearth. It was indeed not so much the fear of human enemies, that drove the primitive men of the archaic period into the natural caves of remote mountainous regions; but the circumstance, that protection against cold and the animal world would be most conveniently found there. The custom of such a life in dark caves indeed long influenced the art of planning dwellings in regard to lighting, as we shall see; evolution of richer modes of life could only appear after the primitive customs of living had yielded to other and more artificial habits.

3. Tent of the Nomads.

Thus stands at the beginning of every development of the dwel-

dwelling not the fortified citadel or the secure cave, but the portable tent of the nomads and the hut of the peaceful settler. From the nomadic period scarcely any assured starting points indeed have been preserved for us, for the domain of the northern mediaeval art. The frequently repeated attempt to find such in the forms of many prehistoric burial urns approximates this, since these doubtless represent imitations of dwellings. But in details it does not lead to an assured result, since the forms of these primitive art products become so indefinite by the conditions of the archaic art of the potter and the awkwardness of the workman, that very diverse conclusions may be deduced from them. Whether we have to behold in some of these primitive evidences from the archaic period actual imitations of tents of nomads, therefore appears quite uncertain; it is for our purpose also without great importance, as the nomadic tent has not left behind any recognizable influence upon the later mode of living. This may be connected therewith, as von Essenwein already stated, that the word 'dwell' originally merely signified "to sleep, eat, drink and labor" somewhat in a definite place; but together with the words custom and usually, it originally meant the permanent, both in the sojourn as in life, the ordinary life, the customs of life and their performance.

4. Prehistoric Hut.

The starting point for the "dwelling" in this sense is formed by the fixed settlement in the simplest form of housing in huts. We can deduce something for these from the urns for ashes with tolerable certainty. Contrary to the generally received opinion, that the circular form was the primitive form of the hut, many certainly assign the rectangular form to the earliest period. We further perceive, that a hole was formed for the escape of the smoke, at least frequently at the apex of the four-sided hip roof, and that further a door closure was already known, which consisted of beams placed crosswise.

Of the plans of such huts and their equipment, not only pictures have been discovered by recent excavations, but frequently actual remains, that give us a surprising impression of how the dwelling of the well to do possessor was furnished with r

relatively great comfort even at the close of the stone period. The most important finds of this kind are those at Grossgartach near Heilbronn. ¹ There was found a large settlement of about 90 dwelling places of the stone period, all of the same ground plan, only differing in dimensions and details. They are all sunk into the earth from about 1.64 to 4.10 ft., and after thousands of years their remains are recognizable by us, since the later filling of this excavation is sharply limited from the undisturbed and natural earth. The most important of these farmsteads is shown by the ground plan and section in Fig. 1.

Note 1. Schliz, A. Das steinzeitliche Dorf Grossgartach. Stuttgart. 1901.

4 It consists of two parts, a larger and entirely plain stable and a dwelling. Both buildings are conveniently accessible by descending ramps; at the house of nearly square plan this access is separated from the principal room by a division wall to form an entrance lobby or wind shield. From this entrance one passes first into the living room proper, in the middle of which is found the hearth pit. The separated sleeping room adjoined on the sheltered part of the hut, and was raised about 1.31 ft., so that its floor might also serve as a seat for the hearth room. Other seat benches cut from the natural soil, lie at both ends of the sleeping room. Like the floor of this room serving for beds, they were originally covered with wood; otherwise their form would not have been preserved; yet this covering has completely fallen into dust and disappeared without a trace. The sections A B and C D of our illustration show the heights of these parts and the plan of the hearth pit. In the pieces of hard clay mortar are found impressions of wooden timbers, from which one may conclude, that the walls consisted of a double interweaving of vertical sticks 1.97 to 2.36 ins. diameter with cross sticks of 1.18 in. thick, whose interspaces were filled with clay mixed with chopped straw. On both sides a coating of pure clay mortar covered the walls; remains found prove, that they were neatly smoothed inside and were decorated on the yellow ground by painted zigzag patterns of white and red colored stripes about $\frac{3}{8}$ inch wide.

Thus the whole forms a house design well calculated for a

comfortable life, that gives evidence of a relatively high civilization. This impression is strengthened by the finding of carefully wrought and richly ornamented pottery, the numerous remaining and very diverse tools and weapons of stone and bone, as well as the evidence of numerous domestic animals, consisting of cattle, swine, sheep and goats. Thus will one agree with the discoverer of these archaic dwellings, when he says:-- "If we compare the state of civilization in the stone period, the well equipped dwellings, arranged according to a thoughtful plan, the developed tastes and the knowledge of art, that appear from the remains of this house equipment with the remains from later times, then we cannot say, that the state of the entire civilization of the peasants of Grossgartach, if we disregard the limits imposed by the materials, was no lower in the stone period than in the later times and perhaps even today."

5. House Excavations of the later Lime.

The dwellings of the stone period at Grossgartach were not destroyed by violence but willingly, indeed were abandoned by the moving of the occupants. A long interval and a complete interruption of the connection of civilization opens between them and the later settlement of the same region. So much more important is the fact, that also the later settlements, from the bronze period down to the time of Roman rule, exhibit the same ground form of the dwelling, i.e., that built over a house excavation. That is not surprising; for the form of this hut half sunk in the earth is so advantageous as a protection against the weather, that they are everywhere easily found again. For the temporary shelter huts of simple forest laborers the same are in use today in Germany, though in an undeveloped state. Moltke states in his letters from Turkey, that the same mode of living was generally common in Wallachia in the first half of the 19th century, and on the Volga the lower class still frequently live permanently today in entirely similar cave-like dwellings, sunk about 3.3 ft. deep in the earth.

6. Statements of Tacitus.

These very primitive dwellings are important in that they

bring to us an understanding of the oldest illustrations, that we possess relating to the mode of life of the ancient Germans, particularly the statements of Tacitus in "Germania". He states indeed not from his own observation, but from hearsay, and thus we obtain from him only an indefinite picture of the form and the internal arrangement of the German houses. Yet he states the custom of living in "subterranean caves", by which we understand properly something similar to the houses at Grossgartach. He further mentions, that the houses of the Germans were built without a knowledge of bricks and clay and of shapeless materials, thus indeed of clay, and that they were frequently coated with bright earthy colors. These are also things already found in the houses at Grossgartach 2000 years earlier.

7. Inferences from the Germanic national Laws; the House with a single Room.

We may form somewhat more definite opinions of the condition in which the German mode of living found itself soon after the migrations of the nations. We are there instructed by various sources, particularly by the national manuscripts of the national laws dating back to about the 6th century, as they lie before us in the Salic law of the Franks, the laws of the Germans, of the Bavarians etc. They naturally give us no description of house and court, yet they leave to us from the sort of judicial decisions tolerably clear conclusions relating to their plans. Thus results as a common peculiarity of the German house of that time, that its interior formed a single undivided room, which extended to the roof without a horizontal ceiling. (For example, it was then connected with the ability of a new born child to inherit, that the infant should have opened its eyes and have seen the four corner posts of the house and the blackened roof!). The floor was without covering; the house stood without foundation and directly on the ground. Among the Franks it was so lightly constructed, that it could be overturned, which we learn because a fixed punishment existed for this case. Among the Bavarians are mentioned sunken corner and intermediate posts. One may doubt, whether this refers to a form of wattled wall with clay coating, similar to what we learned from the prehistoric buildings mentioned, or

to a kind of regular half-timber work later common and filled with clay, or where the intervals between the posts were filled with horizontal logs, like the so-called log walls. As a peculiarity appears further in the laws of the Bavarians a portico. But this was not restricted to this single race; for its name appears similarly in all languages. On the other hand it formed a characteristic of a richer house design. Doorways existed everywhere, sometimes with and sometimes without closures. In the interior the open hearth fire burned in the middle of the room, indeed at first without raising the hearth place above the floor; above it in the roof was an opening for the escape of the smoke.

6 It results from all these facts, that the mode of living of the Germans was still of archaic simplicity at their entrance into the history of the world. This picture is not much changed by certain contemporary examples of a richer kind. Thus for exalted conditions are proved larger hall structures, "halls", whose roof was supported by one or more "ridge columns", and in which we may assume careful execution of the woodwork, rich ornamentation by carving and painting in colors. Such halls with elevated seats for the chieftain, long benches for retainers and the blazing hearth fire in the midst are frequently mentioned in the heroic songs, especially in northern Scandinavian traditions; they also frequently appear to have been finished with openings at the sides, the "eye doorways or wind-eyes." (Window is still today the English name for these!). Yet such openings are not to be understood as properly windows, but as small openings, which found their place close under the eaves, and rather served for the escape of the smoke of the hearth than for lighting.

8. Greater Farmsteads.

If a single room did not suffice for the needs of the family, as natural for important persons, then men found the simplest way was to build several similar houses. Then as an enclosure of the farmstead stood the living room, the hall, sleeping rooms, storehouses etc. As further parts of greater farmsteads occur bathhouses ("stuba", perhaps so-called from the scattering of the water) and also under various names the subterranean

dwellings previously mentioned by Tacitus, the latter designated as for occupation by the woden, for weaving rooms and for storerooms. Remains of their lower parts, consisting of a circular or elliptical excavation ending in funnel shape have been frequently discovered. They were covered by a layer of beams even beneath the surface of the earth, over which rose the apartment half buried in the earth, like the prehistoric dwellings of Grossgartach described in Art. 4. Thus the lower room served as a storeroom and hiding place; the upper formed a protected dwelling place. Whether the chief use for the handiwork of the women, and especially for weaving, required under contemporary conditions, that a more abundant lighting should be introduced, may well be doubted. Against such arrangement of windows may be said, that from lack of a window closure men would have again lost the desired comfort of the room, at least for the colder part of the year; also for the simple work of prehistoric weaving, it is unnecessary to assume such great need for bright lighting, as we now hold as self-evident. And just for comfortable warmth men placed special weight on this room. It was served both by this sinking into the earth, as well as the banking in manure already mentioned by Tacitus; from this then comes the whole of the name of "dunc", and this was still esteemed for weaving rooms in many regions of upper Germany until in the modern period. Another designation of the plan is "pensile", perhaps derived from the extension (Latin *pendere*) of the floor above the lower storeroom.

From this last appellation we may then conclude, that the at first archaic room only serving for household purposes, even experienced a further development and preference on account of its comfort; for its idea was transferred as "phisel" or "pesel" to the most dignified and richest room of the house, the reception hall of later times.

The multitude of these entirely single-room structures was then increased, since it frequently appeared unseemly to a free man to dwell under a roof with servants, and because the care of animals and other requirements of rural agriculture. Even if we assume, that the greater portion of the herds lived in the open air without special protection, yet for the beasts

serving for household use some stables on the court were always necessary. Thus even under simpler conditions there existed stables, huts for the servants and maids, bakeries, store sheds and the like, and there were also found for important persons the "hall", houses for retainers and guests, besides the dwelling of the master, and we shall see that such an assemblage of mostly small structures still formed for a long time the ground form of the German farmstead.

9. Modern Peasant's House a Type of later Origin.

The present types of German rural dwellings known under the names of the "Saxon" and the "Frankish" houses, were not developed in that early period; their evolution belongs to a later time. Men long believed the contrary for the Saxon peasant's house, and could assume its derivation from the ancient Celtic buildings, that were built in three aisles with two rows of middle supports, for the housing of an entire group of kinsmen. But this is decisively contradicted by the evidence of the sources mentioned, which afford for the Saxons no illustration essentially different from those for the other German races; a further contradiction is the circumstance, that the Anglo-Saxons did not transport this form of house to England, which they probably would have done, if it had expressed their national customs. Moreover the uses of the different parts of the house in the Celtic family house and the Saxon peasant's dwelling are quite different, so that for comparison only remains the conformable ground plan of the three-aisled principal room. But this results entirely of itself from the purpose to construct wide rooms; it is also, without assuming any connection, employed in both the old Roman peasants' houses, according to Vitruvius' description, and in the halls of Scandinavian royal courts.

10. Equipment of the German House.

If we thus obtain for the form of ground plan of the primitive Germanic housing a very simple idea, yet one need not therefore represent the entire equipment and housekeeping as thoroughly rude and barbaric. We can much rather assume a tolerably full artistic development of the naturally prevailing wooden construction. The poor man must indeed build his house

without the aid of skilled workmen; as expressly stated, he was owner and workman in the same person, and we must apply no high standard to his work. But for the important man, who could combine crafts of many kinds for his building, he desired to treat his buildings in an imposing manner by rich carved work on the preferred parts of the building, such as door jambs, ridge columns etc., with animated painting and perhaps also gilding of these ornaments, and further in the use of leather work, colored embroidered fabrics for hangings on walls and for covering floors. The form world of these ornamental portions must have moved in the path of fanciful linear ornaments and interlaced borders, that especially prevailed in northern art until the 13th century and even later. With this is recognized the decoration of the apex of the gable by stag horns or by carvings on the crossed ends of the rafters already in the earliest period. Of the effect of such ornamentation information is afforded by the spirited descriptions of the poets, and perhaps even more important is the testimony of that Priscus, who traveled as a Greek ambassador to Attila's court and has left behind a perspicuous description of the careful and visible impression made upon him by the execution of this design, that certainly was erected by German workmen. We learn from him, that the houses of eminent men were not built of rough logs, but of carefully wrought beams, covered by beautifully smoothed and carved boards. Graceful fences in circular form, built more for ornament than safety, surrounded the entire court. In the interior of Attila's reception hall the seats of the guests were arranged entirely after the German custom along the longer side, while the king's throne was at the middle of the end. Behind this was the sleeping room of the king, only separated by tapestries and portieres of varied colors! Even here at the royal court the state hall and sleeping apartment were also combined in a single room; how much the more must we assume such a simple mode of life among those of less importance.

11. Examples from Norway.

Remains of such an original mode of living no longer remain from the period described; but we can represent to ourselves

by old houses, which in Norway's remote valleys have preserved the customs of a long vanished age until relatively recent days. There in the southern portion of the country have been found still simple rectangular wooden houses, called "bur", with a fireplace at the middle and an open vestibule (Fig. 2²), entirely corresponding to the descriptions of those old law books. There also in Thelemarken has been preserved the custom of increasing the number of buildings, when a single one of the usual dimensions no longer sufficed. Fig. 3³ exhibits the development of such a group of houses, that is entirely based on the expedients of simple wooden construction, and therefore may be regarded as a continuation of primitive types. These further show, how such houses were elevated above ground on vertical posts, in order to protect them and their contents better from dampness, perhaps also against animals; finally, how the design of an upper story ("sollers") was added under the simplest conditions. But there are also found in Norway examples of the earliest extension of these ground forms. Thus it apparently became the usual custom there to enclose the vestibule, and for protection against the hard winter to provide it with a side entrance to stop the wind, whereby a separation of the projecting rear part of the room resulted in the form of a chamber. Figs. 4 to 6³ represent such a house from Kveste near Saetersdal, dating from the year 1668, and Fig. 5 is the ground plan at the scale chosen for all illustrations in this Heft, Fig. 6 being the same ground plan repeated at twice the scale for better observation.

2. Henning, B. *Das deutsche Haus*. p. 64, Fig. 36, and p. 68, Fig. 40. Strasburg. 1882.

Note 3. Dietrichson, L. & H. Munthe. *Die Holzbaukunst Norwegens in Vergangenheit und Gegenwart*. Pl. F. Berlin. 1893.

We see in the middle of the room the isolated hearth, over which the kettle hangs on a rotating crane. An opening in the roof permits the escape of the smoke and at the same time, as the only source of light, admits to the room a certain amount of light, sufficient for the simple requirements. It was common to close this by a frame covered with transparent materials for better protection from the weather. Along the three

walls of the room not occupied by doorways extended benches; opposite the entrance a table occupies the entire width of the room, also with movable bench seats, so that numerous occupants could find places at the same time. On the upper part of the wall were fixed board shelves to receive the smaller utensils; almost one-half the floor area was then occupied by a scaffold placed at the height of the beginning of the roof, that forms the germ of an upper story and could be utilized, both as a storeroom and a sleeping place. A similar suspended floor is also arranged above the entrance lobby.

Aside from the two elevated sleeping places, which are indicated on the plan by dotted lines, this house takes us back to the most ancient arrangement of permanent dwellings, and it contains nothing in arrangement or construction, that we cannot assume to have existed as well in the primitive German dwelling of a well to do man. A peculiarity compelled by the Norwegian climate indeed consists of the narrow and plain portico covered by a shed roof, that extends along the two weather sides of the house externally. It serves well as a handy storage place for forewood, that in such a manner may contribute by its use to the warmth of the house.

12. Influence of Antique Building Customs.

It is now next to believe, that this plain form of German architecture must have been thoroughly and completely transformed by close contact with the more developed antique customs, such as the conquest of the western Roman lands introduced. And yet this is not wholly the case, and this also explains without difficulty, that the cities in which the antique civilization endured through the devastations of the migrations of the nations, possessed small attractions for the German conquerors. That the antique custom of dwelling in small, dark and cave-like rooms, that Germans accustomed to free space could not endure, is to be directly assumed. They also further preferred their native manner of living in detached huts. Thus the general arrangement of the court, usually composed of a number of single room houses, came to predominate not only in German lands, but also in the conquered Roman domain, even in the South of France, permeated by antique civilization. First of all, the

great hall as the chief part of important dwellings was also introduced in southern architecture.⁴ We also meet with it in the famous edict, decreed by the Lombard King Lothari about the middle of the 7th century concerning the working conditions of the mechanics of upper Italy, the Comacine masters, appearing under the name of "sala" as a permanent and generally understood conception.

Note 4. Enlart, G. Manuel d'Archaeologie française. Vol. 2. p. 59. Paris. n.d.

But still in details much was introduced into the building customs of the new masters. Naturally for the erection of their buildings they employed artisans of the subjugated regions, and by these stone construction was frequently substituted in place of the ordinary wooden construction, first in the South and then gradually in the Northwest. Thus the Germans adopted the names of most technical expressions occurring in it. The words were formed after the Roman manner, but frequently with a characteristic change of gender, like wall, (mauer, feminine, murus, masculine); feminine like the wall, the pier (pfeiler, from pilarium, neuter, and shrodil, wooden support); further brick (ziegel, tegula, feminine; the stone), mortar (mörtel, from mortuarium, neuter, lime), linewash (estrich, astricum, neuter; the canal). Other still simple borrowings such as lime (kalk, calx), pavement (pflaster, emplastrum) and the chamber (kammer, kamera⁵). According to the original meaning of the word, the latter was at first the designation of a vaulted room, then more generally that of an important apartment. Through southern influence men further became accustomed to construct the important main building in two stories. Above the lower customary hall the "solar" (soller; solarium) was built as a dining or sleeping room.

Note 5. Heyne, M. Das deutsche Wohnungswesen. Leipzig. 1899.

How difficult became the adoption of this new arrangement is easily apparent. Already the simple and durable construction of such buildings presented great difficulties, where well trained mechanics were not at command, and where they had fortunately been erected, care and security were wanting to their maintenance. We possess numerous tales of the falling and oth-

other injuries to such structures. Thus in the year 586 Duke Beppolenus of Angers and his retainers broke through the floor of his dining room (solar); in the year 876 a dining hall fell under Charles the German; even in the year 1045 the same misfortune occurred under the Emperor Henry III. Such a building in stories also require the construction of stairways and ceilings, which had not been known before. It characterizes the derivation from the antique, that the ceiling received the names of "himilezza" or "gehemelze" (heaven) from the decoration by stars transferred from the antique. Simple, but representative for the entire middle ages, the stairway was usually placed outside the building, generally ascending in one straight flight and ending in the usual porch before the entrance doorway. By the design of the upper story it further became necessary to arrange side openings for light for the lower story; the name of these windows was "fenster", formed from the Latin fenestra, and also "augentor." But glazing these windows still remained a rarity for a long time. It is itself preserved in rich churches and monasteries in countries of ancient civilization. The manufacture of glass was highly esteemed as an art. It was introduced first into England, and expressly as a "very great art, very suitable for the lamps of churches and monasteries, or for the different uses of vessels." In the provinces of northern France and Germany this skill was introduced much later. The new form of house further had the disadvantage, if the traditional location of the fireplace in the midst of the house was retained, that the smoke could no longer pass out through an opening in the roof, and it molested the occupants much more than before.

Men have been satisfied by patience in many cases; but in important houses there found place as a further increase of architectural expedients the fireplace instead of the open hearth, i.e., a mantle to collect and the chimney to carry off the smoke. The close connection of the two is expressed in the singular confusion of the two conceptions; for the late Latin "caminus", that designates the fireplace to us is first the name of the smoke flue; our German name of "schornstein" for this being derived from a portion of the fireplace, namely

the corbels supporting the hood for the smoke. With the design of such chimneys was connected a necessary change in the general arrangement. The fire was transferred from the middle of the room to one of its walls. We can now recognize again from later conditions, how strongly men frequently adhered to the old arrangement of the interior of the hall, since it is actually presented by the arrangement of the seat of honor and of the benches for retainers a strikingly clear expression of the retainers and feudalism of the middle ages. The necessity of giving up this entirely customary grouping of the courtiers around the hearth fire, if men desired to place an upper story over the important hall, must have strongly restricted the further extension of the architectural form. The chimney place therefore first came into use more for smaller living rooms; but in such it appears to have been extended soon rather commonly for princely and monastic uses. The conception of the "caminata" or later "keminata" as that of such a living and sleeping room capable of being heated, already belongs to the fixed ideas of the Merovingian period. Beside such influence in structural details, the influence of the richer Roman life appears in the borrowing of entirely new ideas. For example, there arose the necessity of building granaries ("speicher"; Latin spicarium) from the cultivation of grain according to Roman customs; from the model of the "cellarium" men learned to build cellars, at first entirely as a storehouse above ground and not as a subterranean room in the modern sense.

13. Buildings of Theodoric.

All these influences of a foreign important existence naturally first affected the extensive courts, that princes and kings built as residences. In them can we soonest find presented the degree of influence. Unfortunately only very little evidence has been transmitted to us from the earliest ages of adjustment. Of the highest importance would be to us all knowledge of the age, in which under the great Ostrogoth Theodoric sought to fuse German rule with Italian civilization, in which under careful preservation of the traditional, not only of Roman administrative forms and legal principles, but even the court etiquette were retained. On all these matters we are r

relatively well instructed; but of the buildings of the great Ostrogoth we know little, that is tangible. Men indeed believe that in extensive terraces near Terracina may be recognized the remains of a great palace of Theodoric; but even if this conjecture be correct, they tell us nothing; for all actual buildings, that stood on them, have long since vanished without a trace. Still more in the domain of the imagination belongs the significance of the mediaeval coins and seals, on which one might see the Veronese palace of Theodoric. These representations certainly date only from a much later time; the style of the buildings represented entirely corresponds to what we might expect from about the 12th century, and thus remains as their sole connection with the Gothic king the probability, that the buildings, which are represented in these strongly conventionalized illustrations, stood on the same place on which before them rose the castle of Dietrich of Berne. Just as little can be obtained anywhere a vivid idea from an apparent remnant of the Palace of Theodoric at Ravenna. Already according to the earlier opinion could it be regarded as at most a gateway of the plan of the entire palace, therefore scarcely affording a starting point for the style of the latter. It has recently been made very probable by Ricci, that the entire structure only dates from a later time, about the 12th century. With this entirely agrees the late Byzantine treatment of the forms of the building, and we must indeed strike it from the list of Ostrogothic structures. It is no better with the so-called Palazzo delle Torre at Turin as a building of the Lombards. The illustration contained in the first edition of this Heft is reproduced from older drawings; it therefore lacks the passages covered by great voussoir bricks in round arches, which prove that the structure was in general not a palace, but a monumental city gate, similar to the Porta Nigra at Treves. Its origin may be ascribed with tolerable certainty to the late Roman imperial period.

Thus there remain only two evidences of the great secular activity of Theodoric. One is his Tomb, that building still enigmatical in much, from which we can recognize, apart from all conjectures relating to it, that Italian architecture in

that case offered no resistance to the intrusion of unusual architectural ideas. But we can deduce therefrom, that even house architecture itself soon adapted itself without great opposition to the novel customs of the conquerors. This is also expressed by the representation, that exhibits in the mosaics of S. Apollinare at Ravenna the Palace of Theodoric also at Ravenna, and transmits to us the second monument of his age. (Fig. 7³). The whole gives us a conventionalized picture of the city of Ravenna, designated by the inscription on the gateway as "civitas" (city) of Ravenna." In the foreground is the palace of the monarch, or rather its principal buildings in conventional simplification, that represents the hall or the "palace". It forms a central hall extending backward and two low transverse halls adjoining its sides. All rooms open in front by arches on Corinthian columns. Above the low side halls appears to have been an upper story, the "solar". The circumstance, that similar arrangements are again found in later times, may indeed make it appear possible, that in spite of the thorough conventionalization of the detail forms and of the surroundings, the chief elements of an actually existing building are here represented from nature. In any case is it an architectural form, that would still be foreign to the slightly earlier Palace of Diocletian in Spalato. We can perhaps see in it the antique conception of the ancient three-aisled princely hall.

Note 6. Mothes, O. *Die Baukunst des Mittelalters in Italien*. p. 191, 192. Jena. 1884.

But the wildest storms soon raged over Italy. The destructive conflicts in which the Byzantines contested the land with the Ostrogoths, then the desolating invasion of the Lombards, so deeply affected the life of antique civilization and art, that only a few remains of ancient skill in handicraft continued, only in the case that the ornamental impulses, that from Byzantium and the far East were busied here in a disjointed way, but certainly were no longer strong enough to form and develop new types. For a long time Italy no longer comes into consideration as the leading country in our branch of architecture; France enjoyed under the Merovingians a tolerable quiet, both internal and external, and it soon passed to the first place.

14. Merovingian.

The court of the Merovingians is evidently influenced by starting points of all kinds, so that Viollet-le-Duc could attempt its restoration by an illustration.⁷ The Palace de la Verberie near Compiègne no longer remains, and Garlier⁸ gives a description on the basis of the ruins, which he had seen, as well as on a permit of Francis I, that allowed the removal of a part of the building, and this indeed leaves much to be desired in clearness, but presents many valuable conclusions. The great hall structure will be particularly mentioned here, placed at a great court and forming the termination on the West. This hall building was called "Mallobergium" in Latinized German, indicating its purpose as a seat of justice. The entire plan had from East to West a length of 250 toises or about 393.7 ft.; the chapel formed the eastern end, the erection of which was attributed to Charlemagne, and which still bore his name in the 14 th century. Between the two was a well arranged long row of buildings of different kinds and heights; for soldiers and important courtiers, for artisans and their equipment, and for agricultural purposes. The centre must have¹⁴ been occupied by a splendid two-story structure of greater height. It is indeed to be assumed, that it was the Mallobergium. Thus we find here again the grouping of smaller and larger buildings, so characteristic of the earliest times; likewise in the sense of the German conception without any fortification whatever. But the whole is yet arranged with the palace and the chapel at the ends, brought into strict order. We can indeed recognize therein the influence of a mind trained in the antique, and view in such a royal court the transfer of the antique suburban villa into new conditions. We know nothing of the method of construction; yet the circumstance that the buildings remained so long permits the conclusion for stone construction.

Note 7. Viollet-le-Duc, E. Dict. Rais. d'Arch. Vol. 7. p.1 et seq. Paris. 1875. -- Partly from Thierry, A. Recits de Temps Merovingiens. Recit 1.

Note 8. In Histoire du Duché de Valois. Vol. 1. Book 11, p. 169. Paris. 1764.

15. Works of Charlemagne.

Entering more into details, Charlemagne then sought to win the acquisitions of antique civilization for German life. In a predominating literary, yet also in practical work were men busied under him in imparting to the revived dignity of the Roman empire the corresponding magnificence by architectural activity as well. Good fortune had preserved remains of successive buildings, with which he equipped his important royal courts, the palaces at Aix-la-Chapelle, Ingelheim etc., together with instructions and suggestions, that he introduced for the management of his smaller landed estates. The latter in particular afford us a tolerably distinct idea of what such royal manors included in structures and other equipment, and which we must regard as best equipped in their vicinity.

16. Carlovingian Royal Courts.

One of the largest farmsteads of its time was the Royal Court Asnapio, which is described for us in the "Breviarium rerum fiscalium". (Report on fiscal affairs).

It is enclosed by a well fortified palisade, has a stone gateway with solar above and contains not less than 25 separate buildings. The royal hall as the most important of these is built of stone in the best manner; it contains 3 chambers, i.e., state apartments. It is surrounded by porticos and is furnished with 11 rooms (pisiles) in the upper story indeed; also with storeroom and two vestibules. Beside it stand in the court area 17 houses with a single room each, a stable, kitchen, bakery, 2 granaries, and 3 stables for horses. A smaller portion of the court is enclosed by a separate palisade as a farmyard.

From this results the representation of a quite extensive design, that in the principal building in several stories and its upper story with numerous rooms far exceeds the ancient custom. it is certainly one of the largest courts described. Several others possess main buildings with but two rooms each in the lower and upper stories; in one we find indeed the royal dwelling again built of wood "in the usual manner" and having but a single chief apartment, thus being erected entirely in the manner customary from the most primitive times. Likewise the indications of household management require primitively enough,

when prescribed, that the houses shall have hearth fires, that they shall even further have the necessary equipment and tools, such as beds, table linen, drinking cups, vessels of all kinds, chains and axes, borers and cutting knives, so that it should not be necessary to borrow these elsewhere. Thus here in even the royal residences, in the authentic description of advancement clearly visible from German influence, that expresses itself in the subdivision of royal dwellings into separate rooms, with manifestly unbroken in the usual life, the prevailing primitive simplicity and lack of restraint in the entire conditions of life. But these must naturally exercise their influence in the execution of the details of the general plan as described. This affords for us the best support in judging the frequently dark and mysterious remains, that have continued to us from the palaces of the great king. As such were mentioned Nymwegen, Ingelheim and Aix-la-Chapelle. The former may be omitted from our consideration, since the plan was thoroughly restored by Barbarossa, and was then destroyed in the year 1794, checking it by existing drawings therefore being impossible.

17. Palace at Aix-la-Chapelle.

The imperial Palace at Aix-la-Chapelle, in which was certainly embodied the highest degree of architectural ability then available, is proved in the main lines of its general plan, in that the two main buildings, the hall structure and palace chapel, that as in la Verberie (Art. 14) lay at the ends of the court, the hall being indeed at the North and the chapel at the South, and in their ground forms, these are yet preserved. The palace chapel forms the Minster at Aix-la-Chapelle, now being the Cathedral Church of the city, and as an important ecclesiastical structure of its time, it was treated in Part IV, vol. 3 of the first half of this Handbook. The hall building is given, at least in location and outline in the foundation walls of the existing City Hall. The area between the two buildings, later occupied by the market place, extended from the Minster to the hall structure on the hill. It was about 328 ft. long and 164 ft. wide, and as a palace court was surrounded by galleries, that afforded a passage, protected against weather, b

galleries were found, and thereby the entire design is certainly fixed in the ground plan. On the contrary its construction in details is entirely doubtful, and it indeed appears somewhat sanguine, to represent these as porticos, two-story wherever possible. The repeated destruction of these halls, that are narrated to us, rather permit the assumption of wood as originally the building material.

Around and outside the vast portico court thus enclosed must have been placed the varied buildings mentioned in the ancient descriptions, for the state apartments, the imperial family, the life-guards, the cathedral foundation, with baths etc.; yet the conjectures⁹ made concerning the exact arrangement are only very uncertain and therefore valueless to us. On the contrary, the hall building is valuable. It stands on the foundation of a Merovingian structure, that here probably formed a plain and probably two-story hall of about 5568×144.4 ft. in the clear. Charlemagne erected on this substructure, elevated about 11.5 ft. above the palace court, a new principal story and extended this hall by the addition of a great apse at the western end, whose masonry remains to us in the later Granus tower of the City Hall; he further added two smaller apses to the longer sides. Thus he secured a substantial heightening of the internal effect with also in the apse an imposing elevated seat for his own person. Supports of wood or of stone also here supported the wooden ceiling of the hall. Whether this hall structure, the palace hall (palatium) had another and upper story must appear very doubtful. But this certainly was the case for the dwelling of the emperor, the "aula";¹⁰ for we learn concerning it, that the emperor through the window lattices of his "solar" could oversee all that entered or departed.¹¹ Of this dwelling we know further, that it must have possessed a ground plan unusually developed for its time; for it is stated, that the Greek ambassador must pass through 5 rooms to reach the apartment of the monarch. The further statement, that all dwellings of the countries projected above the ground, so that visitors to the palace could shelter themselves beneath them from bad weather, and yet would not be concealed from the eyes of Charlemagne, appears to me to indicate

merely the court porticos previously mentioned. With at least equal right, one may see a reference to buildings, whose lower stories each rose above ground with four entirely free wooden posts, as in the oldest wooden houses of Norway, though perhaps in a somewhat more developed form. Therewith must indeed be connected a substantially original idea of all that existed at the Palace, besides the monumental structures of the Minster and of the imperial Hall. 12

9. *To the attempt at restoration of Stephani, worked out with great love from the written sources, but in details with a leaning toward the plan of the Monastery of S. Gall (Art. 26), he himself added the remark, that nine tenths or even more of the results were based on the imagination.*

10. *That this "aula" is not identical with the "palace" is indeed conclusively proved by the statement from the council records of the 17th century, mentioned by Rhoen (Die Karolingische Pfalz zu Aachen. p. 73. Aix-la-Chapelle. 1889), that the ground area of the "aula" was subdivided into lots after the fire of 1656, and that dwellings and guild halls were erected thereon.*

11. *Compare the corresponding passage of the description of the monks of S. Gall in Rhoen, p. 54.*

12. *That these forms of buildings produced by the natural conditions did not exactly appear displeasing at a very much later time, we may see from the representation of the City Hall at Nieuwstadt in Limburg, still existing at the end of the 16th century, which M. Schweisthal reproduced in his Essay of "La Halle Germanique et ses transformations." p. 21. Brunswick. 1907.*

18. Later Carlovingian Buildings.

That the indications here given did not always first pass away without traces, is shown by the buildings of Louis the Pious. The famous so-called Portico of the Monastery in Lorsch (Note 46) gives us good evidence for the previously mentioned spirited descriptions, with its graceful, even if somewhat stiff arrangement of the pilasters and the rich decoration of its covering of variegated marbles. Similar influences of a more technical kind are seen in the careful execution of the

churches influenced by the class of Charlemagne and preserved in several places. And in other respects the main building of the Palace at Ingelheim, a structure that probably belongs more to the time of Louis the Pious than to that of Charlemagne, exhibits influences from the Palace at Aix-la-Chapelle, when in spite of the insignificance of the existing remains and beside a probably three-aisled imperial hall, it permits the conjecture of the existence of a dwelling containing numerous rooms. Likewise the frequent use of stone columns, whether to subdivide the windows or to support the ceiling, is certainly proved here, and the importance of such knowledge is increased by the express statement, that the structure was executed by native workmen.

Thus these great Carlovingian palaces always give us the impression, that by force of the imperial power on them, a considerable advance was made beyond what was before common. It is further important, that this progress was only possible by adherence to antique models, so that it may be said to have formed a precipitate of a learned and literary movement. This must lessen very much its influence on other peoples, as even the use of the acquisitions on the modest imperial courts stood in the way. We shall return to this in another place. Thus the advances of the Carlovingian palace may indeed be recognized in the imperial and princely buildings of a later time, of which they were the prototypes; but it is then not to be thought, that they so soon came into general acceptance in the use of the important men of the people. This was assuredly not the case, at least for the northern countries possessing capability for development. There the national wooden construction in its simplest form remained alive far beyond the period described, as well also as the plain ground plan with a single room for dwellings. Yet if architectural development permanently advanced, if the just mentioned innovations became generally common; then this took place in a different way, substantially under the protection and on account of the monastic societies, which therein played an extremely important part in the history of civilization. The architecture of the monasteries took the lead for centuries after the fall of the Carlovin-

Carlovingian magnificence; it formed the connection, which transmitted to the ruder peoples on this side of the Alps from the inheritance of the antique so many suggestions for the design of the more developed arrangements for dwellings.

I. DESIGN OF BUILDINGS.

Chapter 1. Dwellings of the Monasteries.

19. Beginnings of Monastic Life.

The tendency to withdraw one's self from the disillusion of life into peace and by pious meditation of severe penance to seek a closer union with God is a primitive oriental phenomenon. By the intermediation of the wonderland of Egypt, it was also transferred from the East to the western nations and to Christianity. There was already formed in the second century the first free society of pious colonists under the leadership of S. Anthony, pledging themselves to poverty, self-denial and unreserved devotion to God. Already about the year 340, S. P Pachomius then founded in the Thebaid the first strictly combined monastery, which soon grew to great magnitude, and from which later branched a great number of daughter monasteries. Many of the ground principles there established continued to exist permanently; others occurred at a much later time as renewed customs. To the first species belonged the duty of obtaining a living by personal manual labor, and the preparation for the binding vow by a time of trial (noviciate). To the second group pertains the subjection of the daughter monasteries to the right of visitation from the mother monastery, and the custom, that the priors of the separate monasteries should gather at regular intervals at the principal monastery for common counsel. By the founder of the Order of S. Basil, yet flourishing in the Greek Church, S. Basil (d. 379), these rules were made more rigid; still there yet existed the practice of freely traveling bands of monks. Characteristic of this freer kind of the original monastic life is also the circumstance, that even the Council at Chalcedon in the year 451 still placed the monks among the laity and not with the priests.

The monastery plan of these oriental monastic orders, termed a "laura", is evidently dependent on the fact, that the origin of this monastic life is based on colonization. It consisted of a number of separate cells, which were mostly placed around a spacious court. In the midst of the court rose both the church and the common refectory with the kitchen and attached rooms. Between these two buildings was found the well, as a rule.

Manifestly in substantially similar forms the monastic life penetrated into western Europe after the middle of the 4th century, furthered in Italy and Africa by the Church Fathers Athanasius, Ambrose and Augustine, in Gaul by Bishop Martin of Tours, and it soon greatly extended. But it appears, that already early and besides the free imitation of the oriental conception, the original idea of colonization was affected by the German custom of a train of dependants and the connected habit of gathering together in great princely halls.

20. Benedictine Order.

After various attempts, this fusion of two basal ideas received its fixed form by the rules for the Order by S. Benedict of Nursia (480-543), by which monastic existence in the West was permanently and most deeply influenced. These adopted from the earliest monastic societies the vows of poverty, chastity and obedience, also the rule of individual self-support. Meanwhile the severe command came to not locate the cloister in a city, but away from the pursuits of men, and finally to never leave the monastery domain, except for imperative necessity, carried this rule further to the conclusion, that everything necessary to life, should be produced in the monastery itself. Thus was the foundation laid for the extensive transformation of the monastery, not only by all buildings for industrial work, mills, breweries, wine-industry, but also by trade workshops of all kinds, from smithing and wagon-making to the exercise of the goldsmith's art, copying manuscripts, miniature painting etc. By this impressive occupation with all mechanic, artistic and scientific labors, the settlements of the Benedictine Order became true localities and centres of civilization, and in the wild centres of the earliest middle ages almost the sole intermediaries for the remains of antique artistic and architectural knowledge. Architecturally of equal importance are the rules, that regulated the lives of the brothers in details. Basal indeed is here the prescription, that the brothers, indeed all in one bed, but yet all possibly together, or otherwise each 10 to 20 under a dean, rested in a common dormitory, where a light should burn on account of seeing better. The brothers must sleep in complete clothing

and girded, in order to be prepared for the nightly divine service. Likewise was a common midday meal prescribed, at which in rotation those most capable should read from the Holy Scriptures. The other subdivisions of the day were exactly prescribed. The working time comprised 8 hours in alternating arrangement, but only 7 hours in fasting periods. These were substantially fixed by the arrangement of divine service, which united the entire brotherhood seven times daily and once about midnight. Even the recreation period between those of labor was in great part devoted in common in the dormitory to the study of the Holy Scriptures. The monk living alone in his cell in meditation according to the popular conception was therefore in nowise embodied in the mediaeval orders.

Of less importance in architectural respects for us are the severe rules relating to living, eating and drinking, and to clothing, to the deportment of the brethren toward each other and to their various officials, the subjection of the monastery to the bishop of its diocese, the rank of the abbot, his power of punishment etc. More important are the requirements for admission; these were very strictly conceived. During a test period of one year the entrant had to prove the strength of his purpose, whereby the plan of separate rooms for these "novices" became necessary. There also appears very clearly by the diplomatic conception of this period, that even then by the acceptance of the bringing the corresponding means or the endowment of a sum by the parents was the rule. It corresponded very well with the distinguished character of the community, that also the existence of serving helpers besides was expected as self-evident, and further that he was expressly warned against discontent, in case by local conditions the brothers were compelled to gather the produce of the fields with their own hands. We must conclude from this, that the coarse personal labor was not generally the affair of the brothers, but that these were limited rather to the oversight and management. Moreover the rule of Isidorus Hispalensis expressly assigns the work of agriculture and building to the serfs of the monastery. In spite of the truly strenuous and hard life, that the previously given order of the day brought with strict

adherence, also the rules on the mode of life in regard to table arrangement and drinking were conceived entirely in the sense of a well to do and richly living class. Thus from the first the rule resulted a wider scope for the development of monastic life in the aristocratic sense. And that the development generally took this direction is thereby further proved, in that all reformers of monastic life, all founders of new orders, sprang from the higher and in part the most important class of the people. Also from the undoubted given possibility, that likewise gifted scions of the lower classes entered the monastery and might play a prominent part therein, the monastic brotherhood in nowise exercised admission without choice, but a selection from the best. If this conception of the older monasteries as substantially aristocratic societies does not exactly correspond to a different popular opinion, then it is still not impossible, if the great part played by the monastic life in the civilization of the middle ages be considered, as well as the imposing conception of its architectural expression. For the like reason have the rules of the Benedictine Order afforded the model for the statutes of the distinguished "colleges of canons", that gathered at cathedral and foundation churches, and whose first rule was issued by Bishop Chrodegang of Metz in the year 760.

The rule of S. Benedict certainly owed its predominance for centuries, besides its high moral value, to the circumstance, that it was capable of adapting its entire conception to the most varied conditions, while it left a tolerable scope for the option of the abbot. There was always opportunity, that under an incapable abbot, carelessness and insubordination should creep into the community. Throughout the entire middle ages therefore always continued renewed efforts to restore again the relaxed discipline by increased severity in the rules of the Order. Most important for our consideration are the successively related foundations of the Cluniac and Cistercian Orders.

21. Order of Cluny.

The founder of the Order was a Count Bruno of Burgundy, who in the year 910 took charge of the already existing monastery.

Determinative for the behavior of the new community remained the rule of S. Benedict; yet it was made more severe by the requirement of manual labor besides the copying of manuscripts; also permanent silence was demanded of the members. The Order did not owe its importance to these increased severities of the old rule, since the German movement with the same purpose, that proceeded from the Monastery of Hirsau, attained no comprehensive efficiency. It reached power by the great worldly and political part assigned to it to play, certainly not in accordance with the intention of its founder, and through political complications, it again sank from its proud height. The influence exerted on church architecture by the Cluniac Order and the Hirsau congregation is to be described in a different portion of this "Handbook"; for the monastic life is of importance in two directions. First it withdrew the individual monastery from the influence of the bishop, placed the entire community directly under the Pope, and by the dependence of many monasteries on the mother monastery of Cluny began to effect a closer uniformity of the orders. Otherwise it had first also taken a number of serving helpers, mechanics and other indispensable assistants into the internal economy as "lay brothers" in the closer brotherhood of the monastery, and thereby first made possible the strict isolation of the closed monastery domain from the outer world.

22. Premonstrant Order.

In not too long a time was it likewise made worldly by its active participation in secular affairs, and it became luxurious, so that almost at the same time in two different places appeared new endeavors after reforms. S. Norbert, earlier chaplain of Henry V, founded in Premontre the Order of Premonstrants in accordance with the rule of Augustine, which was collected from the writings of S. Augustine with numerous requirements similar to those of the Benedictine rule. His aim was to practice a severe monastery discipline combined with an active and contemplative life with the preaching office, care of souls and scientific work. This Order is mentioned here, since it acquired considerable importance in the settlement of the East, in the region of the Elbe and in Austrian lands; but

it has not left behind it vestiges of impressions in monastic architecture.

23. Cistercian Order.

The Cistercian Order became more important, and it was founded by Abbot Robert de Molesmes, a Burgundian noble, in the year 1098 in a wild forest region near Cîteaux (Cistercium). He set before himself as his original aim and purpose the making of the Benedictine monastery discipline more severe by hard manual labor, particularly by reclaiming waste lands, together with the renunciation of furthering the external adornment of life. By this devotion to opening unfruitful lands, that later evidently developed special skill in the drainage of swampy regions, an important role in the furtherance of civilization fell to the Cistercian Order; it had rapidly extended to a previously unknown magnitude, so that in the 13th century 1800 monasteries in Europe must have belonged to it. Certainly also for it, and perhaps most quickly, the rich produce of recently cleared arable lands frustrated the aim of its original founder. Wealth and with it luxury soon penetrated into its monasteries; the most important and richest designs of monasteries, left to us by the middle ages, belonged to the Cistercian Order.

The Cistercians again adopted for the preservation of monastic discipline the archaic oriental custom, according to which each daughter monastery was dependent upon its mother cloister and was governed by it. Accordingly the oldest foundation of Cîteaux in combination with the four eldest daughter monasteries of La Ferte, Clairvaux, Pontigny and Morimond, possessed supreme power over all monasteries of the Order, and with the Abbot General at Cîteaux gathered annually all the priors of all monasteries for counsel on ordinary cases. Such a strict connection must naturally also influence architectural matters. Thus the Cistercian monasteries, not only in richness, but also in the isolation of the type, form a termination of this branch of mediaeval architecture. Characteristic for their design is the circumstance, that besides the precepts of the rule of S. Benedict, the Order adopted from the Cluniacs the arrangement of "lay brothers", and afterwards strengthened

the exclusion from the outer world by the prohibition of all activity outside the monastery, including the care of souls.

With this arrangement substantially ended the transformation of Benedictine monastic life; later types of orders, based on other foundations, will occupy us in other places.

24. Ground Form of the Monastery.

The architectural forms in which the affairs of a monastery-- a little world in itself -- were transacted naturally did not proceed in completed form from the head of an artist, but gradually gathered from simple beginnings. All western monasteries were developed in common in this, that the rooms devoted to the common uses of the community, i.e. of the monks or nuns alone, as a basis were arranged around a rectangular court surrounded by porticos, the "cloister", in contrast to the house-keeping court used for the more public affairs and designated as the "clausure." The origin of this monumental architectural form is observed in this, that in the earliest period of western monasticism the clergy of the church erected their cells around the atrium of the Early Christian basilica, surrounded by columns.

In close connection with these prototypes men also later still occasionally placed the cloister at the western end of the church (the primitive foundations of S. Gereon and of S. Maria im Capitol at Cologne are examples of this); but generally on account of greater isolation the location at the side of the church was preferred. When this change was completed is unknown; it is only certain, that in the great monasteries of the Carolingian period we meet with it as already fixed.

25. Monastery of Fontanella.

According to accurate contemporary descriptions, the plan of the Monastery of Fontanelle near Rouen is restored (Fig. 8¹³), just as Abbot Ansegis (822-833) completed it at the close of a long period of architectural activity. Our illustration reproduces the dimensions of the buildings as mentioned in the Chronicle. We see the cloister built in rectangular form on the north side of the Monastery Church. Next it lies at the west the common sleeping room (dormitory), above the middle portion of which was placed a richly decorated solar. Opposite

and extending nearly to the apse of the church, thus leaving space there for a passage, vestiary or sacristy, extended a wing, that contained the refectory and the storeroom. Both wings were connected by a large building in which were arranged the storeroom for utensils and for clothing, and further the dwelling for the abbot, together with other apartments. As a place for the solemn assembly of the monks, at which the daily reading of chapters from the Holy Scriptures also occurred, served the southern wing of the cloister, built against the church, which like the assemblage of the brothers itself has permanently taken the name of chapter. Separate structures for the archives and the library further existed; a tower with a spire 35 ft. (!) high stood detached beside the church. The Basilica of S. Servatius is further mentioned in the description and may perhaps be taken as a cemetery chapel. Nothing is learned of the housekeeping and administration buildings, grouped about the clausure; yet without these the plan is very notable as an example of a not fully developed design.

Note 13. From Schlosser, J. Die abendländische Klosteranlage des frühen Mittelalters. p. 29. Vienna. 1889.

26. Plan of S. Gall.

At the same time as the completion of the Monastery of Fontanella is placed the preparation of the famous plan of S. Gall, that was described in Part. 2, Vol. 3, second half, of this Handbook. It substantially corresponds to higher and more fixed conditions, and proves that in the Carlovingian empire the development of monastic designs was quite rapidly completed. This entirely agrees with the historical statements, that especially for the western Frankish domain speaks the great activity in the founding and erecting of new monasteries, forming a counterpart to this, that also the ground form of the church during that period experienced its first development by the addition of the choir square to the transverse aisle. The plan of S. Gall is priceless for the recognition of the many-sided changes, that were made in a great monastery of that time. Besides the proper living and residence rooms of the monks, the clausure, it exhibits the view of a common life furnished with all the arrangements for an independent existence, with build-

buildings for all sorts of agricultural purposes, for handicrafts of every kind, for imparting instruction to the novices of the monastery, as well as to the youths placed in the monastery for a time. To these was further added a separate building for the dwelling of the abbot, necessary because at the the dignity of abbot was conferred by the kings on the laity like a secular fief. There were also provided a hospital with the physician's dwelling and bath house, together with other hygienic arrangements for the monks; likewise structures for the reception and separate lodging of both important guests and simpler travelers and pilgrims, as well as of foreign monks. Further the requirements made by the developed monastic life are met in the clausure in a form, that was adopted with slight changes to all later alterations in the rule of the Order, thereby remaining determinative for later times. Thus the dormitory was here placed in that wing of the cloister adjoining the choir of the church, therefore affording the most convenient access to the nightly divine service. Further the refectory was already referred to the later permanently recurring place opposite the church, but on the contrary the storeroom retained the western wing as that nearest the business of agriculture and the animals, placed farthest from the inner life of the clausure. Likewise here the wing of the cloister adjoining the church was used for the meetings (convent) of the brothers, as in Fontanella.

The entire design was intended for execution in stone throughout, at least the principal buildings, the church with the buildings around the cloister, as well as the hospital and the school with the cloisters appertaining thereto, the abbot's house, and indeed also the adjacent kitchen, as may be concluded from the inserted arcades. One may determine the same from the other buildings from the fact, that heating arrangements are frequently inserted; yet such a conclusion is uncertain for simple and undeveloped conditions. In any case the execution of these main buildings in stone denotes a great advance from the condition of the national architecture.

27. Stone Construction of the Monasteries.

The preference of important stone construction by the monast-

monasteries, which indicates their position in the general life of the people, doubtless refers back to the southern prototypes, in which it was self-evident. We may assume it already for the earliest plans of the Merovingian period, so far as they were erected on secure ground and with sufficient means. On the contrary at other places and even at a later time, one may have strong doubts, whether the first design was not executed in the wooden construction common in that country. The frequently mentioned passages in the chronicles, from which it follows, that Boniface erected his loved foundation at Fulda in the year 744 at once in stone construction by means of mechanics brought with him, does not actually mean this.¹⁴ It ascribes to him only the clearing of the forest from the chosen place and the construction of arrangements for the preparation of lime. Since it expressly states, that after 8 days he already went away with his workmen, it is much more probable, that the introduced manufacture of lime had for object the making of lime wash, and not stone construction, for the execution of which trained labor was still lacking in that forest wilderness. But aside from such single cases the ecclesiastical founders in any case broke a path for the extension of stone construction, thereby doing great service for the progress of architectural capabilities. Indeed the contemporary enthusiastic statements concerning the splendid structures originating then must be accepted with a certain caution. Part express in their conception a certain sufficiently, a fresh capacity for reception, not accustomed to the sight of important architectural structures, and part the awkward mode of writing in that time, which in every animated description was accustomed to strive for the strongest expressions. Characteristic of the art work of the earlier period is then the description of the great architectural ability developed by Abbot Desiderius of the great Monastery of Montecassino soon after 1050 in order to erect this mother monastery of the Benedictine Order in new splendor. It appeared to him as self-evident, that the best preparation was to journey to Rome and to purchase there columns, bases, capitals and colored marble slabs from the antique ruins, that were then transported to Montecassino and employed for the dec-

decoration of the buildings.

Note 14. See Richter, G. Die ersten Anfänge der Bau- und Kunsttätigkeit des Klosters Fulda. Fulda. 1900.

In Fig. 9¹⁵ is further given a representation of the old cloister portico of S. Gerusalemme in Bologna, which shows to what chude forms could descend the rich architectural idea of heavy wall arches resting on four dwarf columns. The structure probably dates from a restoration of the monastery, that followed destruction by the Hungarian invasion of the year 903.

Note 15. From my own sketch.

28. Abbey at Canterbury.

The numerous starting points given to us by the plan of S. Gall for judging the house architecture of that time make it a highly important source of information for the history of art. In order to form a vivid picture of the appearance of such a monastery, it is less suitable, since without regard to the local peculiarities, it rather represents by a programme the regular requirements, than gives just an architectural scheme. But there has been preserved to us another mediaeval drawing from a little later time, in which the plan of the great English Abbey of Canterbury is so represented indeed in a naive but a thoroughly clear manner, just as it was constructed after the fire of 1070. It served at that time for a superintendent's drawing, in order to record the arrangement of a well conceived plan for water supply and drainage. All buildings are given in such a manner, that their elevations in geometrical representation are revolved down into the plane of the diagram. See the adjacent Plate.¹⁶

Note 16. From Willis, R. History of the Monastery of Canterbury. Reprinted in the Architectural Review. Vol. 3. p. 1 154, 155. London. 1897 - 1898.

We first see the entire monastery enclosed by simple defensive outer walls and further surrounded by the city wall. This variation from the rule of S. Benedict (Art. 20) is easily explained here, since the city was only developed later under the protection of the monastery, and the monastery lying in the open fields was then included within the extended walls, as so frequently occurred. On the domain enclosed by the mon-

monastery walls, there lies the church on the upper margin of our Plate, i.e., on the south side of the plan, already having the elongated choir so characteristic for the later time in England. A tower over the crossing as well as two towers at the east and west adorned it; the former bore on its apex the figure of the archangel Michael with four wings (which is also mentioned as crowning one of the towers of S. Gall); the others terminated with the figure of the vigilant cock and with wrought iron crosses. But there was further erected on the southern adjoining churchyard a low bell tower (campanile). On the north of the choir of the church was added the small vestiary, the room for the preservation of the costly vestments, curtains and altar covers, in which particularly consisted the wealth of church treasures in the early middle ages. Otherwise this part of the building was free and was separated by a narrow court from the adjacent portions of the monastery. On the other hand the western part of the church adjoins the cloister for its entire length. It was enclosed by low round-arched porticos; some of their openings at the eastern side were closed by grilles and were designated as places for speaking to strangers. The rooms located over the eastern wing in the upper story were lighted by small windows, but nothing further is known of them; as also generally later, they must have served as low attics for inferior uses. The entire western wing was occupied by the storeroom. In the eastern wing was first found a room with shed roof leaning against the transept of the church, that indeed served as a sacristy and for preservation of the mass books etc.; then followed as the first example for us a separate chapter hall (capitulum), that occurred here as an assembly room instead of the wing of the cloister formerly serving for that purpose. Otherwise this wing was occupied by the dormitory. The northern wing finally received the refectory; before it rose in the interior of the cloister a vaulted fountain house, in which were arranged the running pipes for ablutions before and after meals, with two foiled water basins, one above the other. On the external side of this wing there lay in the western part another cloister-like portico, that was again designated as a place for conversation.

It then naturally formed the transition to the world outside the cloister, when it opened toward a court adjoining the house for guests. North of that court lay another smaller one in which the cooking was done. The kitchen itself rose in monumental form on its northern side as a ventilated polygonal room, its angles crowned by smoke chimneys and with a vine trellis on the west side. A small building like an apse was attached solely for washing the fish; between the kitchen and the refectory was inserted a low intermediate structure, wherein, according to the note, the entrails were cleansed and sausages were prepared. On the opposite side a wooden porch formed the connection between the kitchen and the refectory.

Adjoining these structures belonging to the clausure in the narrower sense was on the east a second court like a cloister, that was divided in two parts by an alley of trees. The western portion served as a kitchen garden for the cultivation of the necessary roots and medicinal herbs. A particular purpose was not assigned to the eastern part; it may have served the inmates of the hospital for recreation. This adjoins at the east thereof and was furnished with a separate chapel, vaulted kitchen and privy. In its vicinity lay the old and the new house of the prior, to whom may have been assigned the separate oversight of the hospital. At the north of the whole extended further the farm court, on which and next the dormitory was the very conspicuous privy building. It exhibits a plan, such as also played a part in the somewhat earlier description of the Monastery of Farfa in the Sabine mountains. It was a basilican structure, along whose well ventilated middle aisle were arranged the low cells at the sides. In Farfa was it especially emphasized, that each of the 45 cells had its own windows; such are certainly not drawn here. Not far from thence we find the bath house with the storehouse, on the northern border finally being the brew house, the bakery and the granary. Further lay there with a separate monumental entrance the abbot's house in two stories, furnished with a fountain house, built before the lower story. -- Thus the whole affords an extremely clear representation of the diversity of the requirements and of the free certainty, with which they were met, some-

sometimes in monumental form, sometimes plainly.

The indicated water channels also contribute to the impression of a richly developed art of living, that the entirety makes, and they may therefore be briefly explained. First, two springs are utilized. One rises in the lay cemetery, then further supplies the first pond, located east of the church, flows to the new dwelling of the prior, sending thence a stream to the privy of the hospital, which then leads past the great privy and obliquely across the farm court to the city wall. Another branch supplies the bath house, the brewery and the bakery, thence forms a connection with the abbot's house, and further supplies with a number of outlets the kitchen and ends in the fountain of the cloister. A second spring comes from the open land north of the monastery. It is frequently collected in basins, which reserve the water necessary for irrigating the grain field, vineyard and fruit garden. Within the monastery domain it is led directly to the hospital kitchen, turns thence westward to the vegetable garden, in which it supplies an elevated reservoir (again drawn in octofoil form), then further to the cloister, where it is likewise connected with the fountain.

But this was not sufficient. For the case that in summer the springs were not sufficient, further precautions were taken. First the rainwater from the church roof was caught, and part was led directly to the channel, that fed the cloister fountain, part was collected in a second elevated basin in the southeast corner of the herb garden, from which a portion was led to the same places and a portion to the hospital. But for extreme need there were two wells at command. One is plainly drawn as a draw well with a sweep weighted with stone, stood in the cemetery and enabled the spring stream flowing thence to be increased. The other was found in the herb garden and had beside it a "pillar" from which men drew in case of lack of water, thereby being able to supply with water all places for its use, i.e., a standpipe that made it possible to fill the aforesaid reservoir.

We here have to do with an extremely complex technical plan, in which all possibilities appear to be well considered. The

care expended on such matters leads to a further conclusion, that at the time, so frequently held to be rude and uncivilized, men in cultured circles placed a higher value on cleanliness and healthy pleasures, than in so many later and more enlightened centuries.

Thus already in the 12th century, in which the contemporary secular architecture had first advanced scarcely to the beginning steps, in the architecture of the Benedictine Order all works satisfied a rich and diversified life; there remains but little to add, in order to create architectural forms, that were also adapted to the rule of the derived Orders, and consequently remained standard until the close of the middle ages.

29. Monastery of Maulbronn.

As an example of such a fully developed Cistercian monastery is chosen Maulbronn, as complete in plan and in architectural development as also well preserved. The plan of the location (Fig. 10¹⁷) shows us at once, how the whole is separated into two parts.

Note 17. From Paulus, E. Die Cisterzienserabtei Maulbronn. 2 d edition. Pl. 4. Stuttgart. 1884.

First at the main entrance 1, here before the western facade, of the church, again lies the farm court of the monastery. The buildings standing quite irregularly on it date from the most different times and serve for the most diverse purposes, such as stables, granaries (12, 13), mill (10), bakery (11), servants' house (15), cooper shop (17), cellar (18), etc. Just beside the gate lies the guest house (3) and the matins house (4), on the other side being the chapel of the Trinity (2). Such a chapel beside the gate belongs to every Cistercian monastery; it is intended to serve women for the performance of their devotions, who by the rule of the Order cannot visit the monastery church. -- On the east this farm court is bounded by the solid mass of the cloister buildings extending across the entire width of the site, thus of the monastery proper, which we have represented in Fig. 12¹⁷ separately and at the same scale as the other monastery plans mentioned herein. The most important place is naturally occupied by the church, begun soon after the founding of the monastery, erected as a Roman-

Romanesque pier basilica and completed about 1200. Westerly lies a grecaful porch added about 20 years later; on the north adjoins a long and narrow wing, which in order to separate the clausure as quickly as possible from the farm court, was built as the oldest part of the monastery at the same time as the church. It contains in room 22 the storehouse, that already in Canterbury occupied the same place, and which was placed there regularly for simple and practical reasons. But beside it we see in this wing beyond the tunnel-vaulted passage to the interior of the cloister, those rooms which were particularly necessary by the cistercian rule; in room 23 the great refectory of the lay brothers or converts, above it being their dormitory. The very solemn and heavy treatment shown toward the farm court formerly by this wing is represented by Fig. 11¹⁹; now the greater part of this imposing portion is indeed concealed by a porch added in the 15th century and the adjoining and still later flight of steps. Behind the wing just mentioned is concealed the inner cloister, begun at the same time and in similar forms as the porch of the church, with the South wing attached to the church, extended further with the western wing about 1300, and during the 14th century intermittently continued from thence beyond the fountain house to the completion of the east wing. Around it extend the chief rooms of the monastery. On the north wing at the middle lay the proud columnar hall of the masters' refectory (25), placed perpendicular to the direction of the corresponding part of the cloister, in order to obtain space, and therefore projecting far from the mass of the building. It was later designated as the "summer refectory," after the common use of the winter refectory. It likewise dates from the building period of about 1220, and thus before the extension of the cloister lay for a good century detached from the other portion of the monastery constructed of stone. Between these two refectories was the now destroyed monastery kitchen 24; on the east adjoining the masters' refectory was the warmed room 26, a room very important for comfort in winter, the only one of such a rich monastery, that could be heated. Near by and connected by various picturesque stairways with the cloister and the warmed room lay the

brothers' or fraternity room (29 - 30, i.e., the room in which the brothers could remain during their free time), earlier a single connected apartment; behind it were still arranged other vaulted rooms for the wine press and the care perhaps of the best wines (31). South of the brothers' room a passage leads out from the cloister; beyond the latter and yet further in the eastern wing lies the chapter hall 28 with a beautiful chapel apse, dating from about the end of the 14 th century. A narrow tunnel vaulted room 21, that is to be described as a sacristy, concludes the apartments arranged on the ground floor around the cloister. An upper story only remains over the western and eastern wings. As already stated, in that was contained the dormitory of the converts and the storerooms; in this extended for the entire length of nearly 230 ft. the great dormitory of the monks, from which one could pass by a stairway as a rule directly into the transept of the church. These structures of the clausure proper were adjoined by some other buildings, that lay further east in the monastery garden. First the house of the abbot (34), in which he could attend to the management of the monastery and to the necessary and diversified business with the external world without disturbing the quiet repose of the clausure. It dates from the oldest building period of the monastery, but then about the year 1384, it was adapted to the requirements of a later time by a rebuilding, and finally about the year 1493 was brought into direct connection with the clausure by the erection of the new parlor (room 32 for visits and conversation). Finally the hospital 36 lies entirely detached, later designated as the prebendary house, and as important places of monastic life the "shaving fountain" 38, at which the monks gathered each week for renewing the tonsure and for reading the Holy Scriptures. An accessory not belonging to the monastery life was finally the ducal chateau 35, which was only erected after the suppression of the monastery.

Note 17. Later and after the strict separation of the converts and the monks was dropped, it was used as the winter refectory of the brothers.

Note 18. From Paulus, Plate 2. -- The striking arrangement

of the doorway in the upper story without any access leading to it is most simply explained by this, that this opening served as a hoist opening for raising grain etc. to the internal part of the upper story lying over the storeroom.

Note 17. From Paulus, E. Die Cisterzienabtei Maulbronn. 2 d edit. Pl. 4. Stuttgart. 1884.

Thus we here meet with an unusually rich and highly developed entirety. Characteristic for its kind is it, that there did not fall to one age or to one architect the erection of the entire group of buildings. We have endeavored in describing the plan to make clear the gradual origin of the whole. Just as here we almost always see it as a repeated procedure, that for a newly founded monastery, especially if it first originates in non-arable forest or a marshy region to be made cultivable, it must at first be satisfied with the necessary shelter, later under increasingly firmer conditions, to first erect the church and then the other monastery buildings in monumental form. Thus Boniface proceeded in founding the first German monastery; the same procedure is shown by the architectural forms of our monastery as well. And it is undeniable, that just in the abundance of ideas, that many generations have worked into such architecture in the alternation of different conceptions, that stand beside each other as variations on the same theme, there lies a deep artistic and historical chasm, which is absent from uniformly shaped structures. It is here impossible to even approximately reproduce the wealth in splendor of details and the impressive effects of the interiors, that a monastery after the kind of Maulbronn contains; we limit ourselves to showing a few examples of the principal rooms and to giving in a bird's eye view a representation of its general grouping. We see how the forecourt or farm court is here clearly separated from the precincts of the clausure; how the cloister forms the fixed centre or nucleus of the whole, and how the enclosing buildings are related to its internal area; particularly how the north side of the clausure with the widely extended refectory buildings in contrast with the monumental western side entirely renounces all architectural effect externally. The entire monastery is then enclosed by walls and

ditches; likewise some strong towers rise from the enclosure; but this fortification is not to be regarded as pertaining to the design of a monastery. It was also begun during the political disorders of the ending 13th and 14th centuries, and was then strengthened in the contests against each other by the protecting lords of the monastery, of Wurtemberg and the Palatinate.

30. Fortification of the Monastery.

According to the rule, fortification did not belong to the conception of a monastery; the monks, whose chief duty was humility, would have poorly succeeded in holding them during forays and political contests. Thus the monastery domain as a rule was surrounded by a simple enclosing wall, such as by far most monasteries still exhibit, and it trusted for the usual course of affairs to the reverent awe for the sanctuary and to the special peace of God, that all ecclesiastical possessions enjoyed. But against permanent encroachment by worldly rulers care was taken to ensure safety by seeking for itself a ruler as guardian or protector. But how men protected themselves against unexpected attack by a great hostile power by flight and withdrawal to an easily defended locality, the well known statement by Ekkehard gives plain evidence concerning the behavior of the monastery of S. Gall during the Hungarian invasion of the year 926.

Since the unfortified monastery afforded no possibility of defence, already at the information that the Hungarians approached, the abbot caused the most important treasures to be taken to Reichenau, which by its situation in the lake was protected against attack by the mounted hosts of Hungarians. When the enemy actually approached, the abbot with the inmates of the monastery with all valuable property withdrew to a mountain forest nearby, collected the tenants of the monastery lands and the remaining people of the vicinity around himself, and with their assistance rapidly constructed a fort for the people by palisades and barricades, for the reduction of which the prowess of the enemy did not suffice.

This now did not prevent the protection of fortifications of such monasteries in countries newly won to Christianity, that

as advanced posts were particularly threatened by heathen attacks; yet under such conditions well regulated and architecturally developed monastery buildings could not in general come into existence. For countries of orderly civilization a fortification capable of resistance forms a rare exception. It then especially occurred if a monastery, perhaps founded on the site of an ancient fortress, formed an important strategic point, and in such cases generally resulted plans, that differed substantially from those otherwise common.

31. Mont S. Michel.

A good example of such a differing plan is formed by the Monastery of S. Michel in Normandy,²² which is located on a point of military importance and had a particular value for the defence of the country in the 13 th century, where the monks thus more strongly developed the defensive system at the cost of the French king, than would have been the case otherwise, while the church developed into one of the most famous pilgrimage localities in Christendom.

Note 20. From my own photographs.

Note 21. From Paulus.

Note 22. See Viollet-le-Duc. Vol. 1, p. 288 et seq. Paris. 1854. -- A similar example in Germany is presented by the Monastery of Comburg near Schwabisch-Hall from the 12 th century, yet which by the rebuilding in the 18 th century has lost more of the ancient character than Mont S. Michel. Likewise there was the apex of the hill too small to place the monastery buildings beside the church according to the rule; there also the fortifications extending down the hill dominated the view of the monastery.

It occupies the top of a rocky hill located near the seashore on whose slopes extend down the living buildings of the monastery, then defensive structures enclose a little city and extend to the base, which is regularly washed by the waves, but is free at the ebb tide. We give in Fig. 17²² the ground plan of the design directly beneath the church, whose crypt certainly extends deeper.

35 From the lower lying story one passes by stairs to the portal A, then by a stairway to the height B; D was the dormitory

of the monks and on the east the dormitory of the garrison; G are dwellings for guests, as well as that of the abbot. Beneath D was a similar hall, which likewise served the garrison, perhaps as a refectory. Otherwise the purposes of the different rooms can scarcely be determined. F is the substructure of the transept of an older church, H that of its western portion, which today remains as the nave of the Gothic church. The room over I is regarded as the library hall. Over E is found a platform, that supports a court surrounded by a cloister, also adjoined on the east and west by other aisles.

32. More modest Plans of Monasteries.

Thus in Mont S. Michel to all diverse requirements of a rich monastery plan are added other rooms, that served for the defense and for a permanent garrison, so that a design of unusual complexity resulted. But not everywhere could one thus draw from an abundance. At other places again occurred a certain limitation, when it was required to prepare a home for a less wealthy brotherhood. First of all for more modest requirements the extent of the refectory was reduced, so that its end adjoined the cloister. The early Gothic Cistercian Monastery of Goldenkron in Bohemia possesses such an arrangement of plan with an entirely similar series of rooms to that in Maulbronn. (Fig. 18 ²³).

Note 23. From Mitt. der K. K. Central Commission zur Erforschung und Erhaltung der Kunst- und historischen Denkmale. Vienna.

In this illustration, a is the main entrance, that again leads between the lay refectory and the storeroom; b is the chapter hall, c the refectory and d the fountain house; between t the chapter hall and the church lies the stairway, that serves for a direct communication between the dormitory and the choir interior.

Yet much simpler conditions are indicated by the plan of the Monastery of Seligental in Baden (Fig. 19 ²⁴). The plan of t the Benedictine Nuns' Convent, founded in the year 1236 and f flourishing for over 300 years, shows with how few and modest buildings one could finally succeed. They may complete the l lower limit of the view of monastic life and at the same time

give a picture of it, such as men might utilize for new foundations at first with temporary structures.

Note 24. From Bau- und Kunstdenkmäler in Baden. Vol. 4; 3. Circle of Mosbach. p. 199.

33. City Monasteries.

Monastery buildings must naturally be subjected to further changes, which are not located in the open country, as the rule for Benedictines, but are placed in the interior of a city on a limited building site. Fig. 20 ²⁵ brings us the ground plan of the destroyed Augustine Monastery in Nuremberg.

Note 25. From drawings prepared by von Essenwein at the opportunity of the removal of certain parts on the basis of plans to be found in the city building department.

At x, y and z were erected three adjacent houses; at w stood a building belonging to the monastery, having the form of a private house externally, actually the dwelling of the abbot. Through this led on one side the way to the portal a of the monastery, while at a' existed a second access to the vestibule of the monastery; at b was the chapter hall, and at c the refectory. Over the wing of the building containing the chapter hall was found in the second story a great hall, the dormitory of the monastery, in the third story being a larger one, probably the dormitory of the novices; the remaining rooms in the various stories served for the other needs.

34. Mendicant Orders; Franciscans and Dominicans.

If the last example was adapted in some degree in the distribution of the rooms to the requirements of the Benedictine and Cistercian monasteries, then in the later middle ages appeared new orders, which with a thoroughly different conception of the monastic life required different architectural plans for their purposes. Before all to be mentioned here are the mendicant Orders of Franciscans and Dominicans, that originated in the 13th century. Besides the ancient vows of chastity, poverty and obedience, their principle is not the flight from the world for devotion to consecrated meditation, but the exercise of pious activity in the world. Thereby they lessened the difficulties against which the maintenance of a severe discipline in the monasteries of the earlier Orders was so frequ-

frequently wrecked. They devoted themselves especially to the care of souls and to public preaching, the defense of church teachings against newly arising ideas, and thereby acquired a leading part in the spiritual battles of the time. The Dominicans in particular exercised for this purpose an animated scientific activity. In the establishments for instruction erected have frequently been placed the beginnings for the development of the universities, as on the other hand as Domini canes (dogs of the Lord), as they liked to call themselves, were the chief promoters of the Inquisition. Both Orders, but especially the Franciscans were devoted to popular activity, entered
 37 further into the chasm, where the gradually increasing difficulty of social conditions did not suffice in regard to the still slightly developed power of the citizens, when they assisted the poor and the sick, sought them, consoled and cared for them. By the severity of their change of life, as well as by their pastoral influence on important persons, they formed a counterpoise against the tendency toward extravagance and luxury, increasing in all classes. Just this high social importance very rapidly produced for the mendicant Orders great favor in all ranks. Everywhere men sought to engage for themselves these modest helpers; princes, states and wealthy citizens competed in founding such monasteries, and scarcely fifty years after the foundation of the Orders, they had extended throughout all western Europe in hundreds of settlements.

Such incomparable activity carried out externally, naturally required an entirely different plan of rooms. There were needed rooms for preaching and for business of every kind, for instruction, and for administration of the many-sided benevolent undertakings. Thus in the ground story of this monastery, besides the rooms intended for the monks themselves in chapter hall, refectory, library, etc., there regularly occurred a series of larger halls, that after the mediaeval custom could be utilized at the same time for the dispatch of the most different affairs. On the other hand in these monasteries always located in cities and without landed estates, there were lacking all arrangements and rooms, that in the older Orders were intended for the practice of agriculture and the storage of crops.

35. Franciscan Monastery at Danzig.

Fig. 21 gives the ground plan of the Franciscan Monastery c connected with the Church of the Trinity at Danzig. ²⁶

Note 26. From plans by the courtesy of the administration of the Museum there, while the Church of the Trinity is added from a drawing by Building Inspector Heise in Danzig.

The main portal of the monastery is at a; yet at b and e are also entrances, from which one passes into a vestibule containing a stairway to the upper story. Grand and in the richest development are arranged the vaults of all rooms of the ground story. They commence directly at the floor, but rise to a considerable height at the crowns. As may be seen from the cross section of one wing (Fig. 22), on the contrary the second story with the dormitories and other rooms has but a low height. The very large rooms are there subdivided by wooden partitions, so that in the common dormitories a cell can be separated for each inmate.

36. Carthusian Order.

This is an arrangement, that was also introduced after the beginning of the 16 th century into the monasteries of the older Orders, when by papal permission the great dormitories were divided into separate cells, one of which was assigned to each one of the less numerous monastery brothers as a living and sleeping room. When men therein departed from the original rule of S. Benedict, they adapted themselves to the generally changed conditions of the time and of living, to which the earlier strict binding of the individual to the activity of the brotherhood no longer corresponded. Thereby was only created at a relatively late date the possibility, that the individual could develop according to his own personality in quiet meditation and could bury himself in independent spiritual work; only afterwards could again be generally fulfilled the conception of the sacred thoughts of a pious monk living in a quiet cell. Yet also this idea, that substantially recurs to the ancient oriental hermit life, already at a comparatively early time found its embodiment, at least in the Carthusian Order founded at the end of the 11 th century. The strictest seclusion from the world, with other increased severities added

to the Benedictine rule were carried so far by them, that the brothers also avoided the common life together. Only on Saturdays did they gather for confession and the dispatch of common affairs; otherwise they lived apart from each other in separate cells for pious meditation and intellectual labor, that the Order especially practiced in addition to field labor. But on accidentally meeting or during occasional common activity unbroken silence was made a strong command. Such a mode of life closely adhered to oriental models and led to monastery plans, that may be termed monumental conceptions of the ancient oriental idea of a monastery, that of a court surrounded by cells. *37. Carthusian Monastery at Clermont.*

Fig. 23 gives the ground plan of the Carthusian Monastery at Clermont,²⁷ certainly somewhat rebuilt in 1676, that Viollet-le-Duc published after an old plan.

Note 27. From Viollet-le-Duc. Vol. 1. p. 307 et seq.

It lies tolerably distant from the city and therefore is furnished with towers of defense R on its enclosing wall. The western portion before the church A B, divided into two rooms, contains a farm court, in which the stables are placed at N, the granary at Q, a dovecot at H, and a bake-oven at T. At O is the entrance; at P are dwellings for guests and at C is the house of the prior, at a the cell of the sub-prior, at E the chapter hall, at F the entrance to the cloister, at S is a smaller and at D the great court surrounded by the cloisters. Adjoining the cloister are the cells of the monks, each with a little garden; at X lies the refectory, wherein the monks indeed gathered only at definite intervals, and at V is the kitchen. Also should be mentioned the prison at Z.

38. Carthusian Monastery at Nuremberg.

Very closely allied thereto is the Carthusian Monastery in Nuremberg, represented in ground plan on the adjacent Plate. When it was founded in 1386, it lay outside the city on a large domain enclosed by a wall. The building itself was arranged for 20 brothers besides the prior and sub-prior, and is smaller than the Carthusian Monastery at Clermont, although the latter was only intended for 18 brothers.

Likewise here in Nuremberg was the western portion a farm c

court, into which one entered at x. At a was the dwelling of the prior, at b that of the sub-prior with a small garden. The entrance to the clausure was found at z; around the clausure were 17 cells c, three of them being in a second row on the south side. At d was the chapter hall, at e the monastery church, at g the kitchen; h are two fountains, i the stables, K and I being granaries. In the upper story over i, k and l were indeed the dwellings for guests, the hospital, library etc.; m was a mortuary chapel; r the great garden, access to which led from the cloister. For the separate cells the inner passage was omitted, that in Clermont extended along each cell on the cloister; likewise was wanting in Nuremberg the covered passage leading to the privy. But also in Nuremberg, as in C Clermont, each monk had three small rooms in his cell, as well as an attic room reached by a stairway. As well known, the Carthusian Monastery in Nuremberg still remains, though substantially changed. When the German National Museum occupied it, the greater portion lay in ruins; yet the entire ground plan was restored from these with the aid of some plans from the last century.

39. Foundations for Canons etc.

Similar to the previously described monasteries are also arranged the buildings for canons, the so-called canonries. There naturally disappears from them, just as for the mendicant Orders, the structures intended for agriculture and for workshops. And there the masters of the foundation lived just as little apart from the world, as did the later mendicant orders, since like these, they further required all sorts of rooms for purposes of administration, for schools etc.; thus their foundation buildings also exhibit a similar and freer development of the ground plan, than the monasteries of the former. In any case there also remains with them as a rule the arrangement of connected buildings extending around a cloister.

40. Buildings of the Orders of Knighthood.

A very particular position was occupied, on the other hand, in the architecture of the Orders by the settlements of the Orders of Knights, so far as located in the country of unbelievers, they served at the same time as the residence of the so-

society of knightly monks as well as a place of arms. Such a peculiar expression, that retained a connection with the living conditions of the actual monastery, in a remarkable way is to be observed less in the great fortress structures, which the Orders of knights themselves erected in the Holy Land. The conditions of the great wars pursued there may have caused, that the knights appeared as leaders of great armies, and arranged their fortresses as greater garrisons, not living as monks. In any case the rooms intended for the Order in these buildings, which were previously treated in the preceding Heft 40 of this "Handbook", played no part essentially beyond that of 41 buildings intended for defense and for receiving numerous mounted men. In the smaller proportions, among those of the Teutonic Order of Knights, and that most nearly similar thereto in the Slavic East for the extension of Christianity, competing with it for the blessings of a higher civilization, on the contrary an appropriate expression was found for the peculiar fusion of monastic and military life.

41. Castle of the Brothers of the Sword at Riga.

We reproduce on the adjacent Plate the Castle, that the Order of the Brothers of the Sword erected after the year 1330 at Riga as the seat of the master.²⁸

Note 28. From Neumann, E. Das mittelalterliche Riga. Berlin. 1892.

Within a citadel rises the massive rectangular mass of the castle proper, piled up in three vaulted stories and extending around a court about 72.2 ft. square, accompanied by porticos. For warlike purposes the chapel is entirely included within the structure; it lies in the second story, occupying in the plainest rectangular form the southern angle of the building, and it is accessible from the gallery of the court, like all other rooms as well. A strong flanking tower affords at the same place space for the sacristy and protects it externally. At the southeast adjoins the chapter hall, considerably longer than in other monasteries, since it not only served for solemn councils as there, but at least in times of peace -- served for permanent occupancy by the knights. Then succeeds the dormitory, that has somewhat less area, beyond being a small room,

perhaps assigned to the commander. Three apartments for the grand master terminate in the north wing and its corner tower the series of actual living rooms. There follow in the same wing some small rooms, that perhaps might serve as guest rooms. They are reduced and intersected by the two chimney flues of the kitchens in the ground story. A passage between them leads to the tower, placed next the moat of the castle. This is a regularly recurring detached tower at the castles of the Order, here of wood, but mostly built of stone with some architectural decoration, and intended to place the privy of the castle at the greatest possible distance from the inmates. Behind one of the kitchen flues is a small punishment cell for penitent members of the convent. Finally at the western angle of the building lies the assembly hall of the convent, the refectory of the knights, and the chapel. All rooms of this second story are covered by vaults, in part of rich design, carried to the considerable height of 27.9 ft., and in great part are lighted by beautiful windows with tracery. In the ground story is found the castle gate beneath the commander's room; beside it are rooms for the gateway guard and the porter. Otherwise this likewise vaulted story contained the two kitchens for the grand master and for the convent of knights, together with shelter for the inferior garrison and the wagons for baggage and arms. A likewise considerable cellar story beneath the east and west wings received provisions of all kinds, and also cattle and horses in time of danger. The attic of the vast building indeed served particularly for defense. For passage between the different stories several narrow stairways were arranged in the thickness of the wall; we are enabled to add external stairs in the galleries around the court according to other existing examples.

42. Monastery Rooms.

If we have in the preceding reviewed the development in which the general design of mediaeval buildings for the Orders have taken form, then in addition thereto are certain requirements to be discussed, to which were subject the plan and treatment of certain rooms in the monasteries, requirements that do not apply to the other domain of secular architecture.

48. Cloister.

Most intimately connected first appears the plan of the cloister, as it results in rectangular form as an aisle around an uncovered court. And yet there appear in it all sorts of variations, that afford evidence of how with unrestricted sense of beauty the ancient masters understood how to adapt themselves to existing conditions. Besides the generally prevailing nearly square form of 65.6 to 82.0 ft. internal width, these formed very long extended courts, as for example, the cloister of the 12 th century at the Cathedral in Hildesheim, in the interior of which and in the midst of the graves of the canons rises the Gothic chapel of S. Anna. Likewise men were not shocked by irregular forms occasionally. Thus the cloister of Regensburg Cathedral is of trapezoidal form and is divided lengthwise by a wide transverse aisle; adjoining this passage is the early Romanesque chapel of All Saints, that formerly stood free in the interior, like the chapel of S. Anna at Hildesheim. Compound forms were also possessed by the now destroyed cloisters of S. Apostles and of S. Gereon in Cologne. In the former the semicircular end of the transverse aisle projected into the angle of the cloister, and therefore to the court was given then a cut-off form by two oblique systems of arches. At S. Gereon it was desired to leave the porch of the church visible, and therefore the aisle of the cloister was returned in rectangular shape at both sides of this porch.²⁹

Note 29. See Boisseree, S. Denkmale der Baukunst vom XII b bis XIII Jahrhundert am Niederrhein. Munich. 1853.

Even entirely irregular ground forms with obliquely abutting or even bent wings have been occasionally developed into very charming and picturesque form, as for example, at the Cathedral of Freiberg in Saxony. And even if with a regular ground plan the effect is essentially based upon the quiet repetition of the same arcades, men loved to soften the rigidity of such designs by treating certain bays as entrance doorways, or more effectively, in that the upper stories of the four sides were of different forms, indeed only certain parts of the cloister aisle being built over. In combination with the higher masses of the church nave and of the transept gable, there thus resu-

results frequently from the strictly connected form of ground plan very picturesque effects.

But the basis for the treatment of the cloister in itself yet always forms the uniform repetition of an architectural system strictly restricted within itself. The cloisters differ from the ground story porches of the citizens' houses in that, they are not freely open to passage like them. They are much rather invariably separated from the cloister garden by a solid parapet wall. Likewise from the upper galleries found in citizens' houses and princely palaces, they are distinguished by the fact, that their arched openings between the main piers are almost always filled by smaller divisions, an arrangement that gives to them the characteristic impression of enclosure and contemplative gathering. We find such richly graduated architecture already often in use, when from lack of means the vaulting is omitted, and men are satisfied by the arrangement of an open framework of the roof over the cloister aisle, which must have formed the rule in the earliest time. Thus in the convincing restoration by Schäfer of Jung S. Peter in Strasburg, which dates from about the middle of the 11th century, and is indeed the loDEST remaining in Germany, and particularly one of the earliest cloisters with artistic treatment. It exhibits the alternation of small columns by threes, beneath which extends the solid wall indispensable in every cloister, with a larger middle pier between the groups; at the middle of each side of the plan a wide round-arched doorway breaks the series of these rhythmically arranged openings. The columns support strongly projecting impost blocks for supporting the thick masonry arches, a form frequently employed for the like case, and for which we represent some richer solutions from the Monastery of S. Paul in Carinthia.

44. S. Maria in Capitol in Cologne.

Essentially more developed than the conception of the Strasburg cloister, reminding one of Early Christian models, is the treatment of the slightly later cloister of S. Maria in Capitol in Cologne, whose general arrangement and section are given in Figs. 26 and 27, the arcades being shown at larger scale in Figs. 28 and 29.²⁹

44 As this forms the rule for the later structures, this is covered by vaults, indeed here being employed Roman cross vaults resting on light transverse arches. Corresponding to the separate divisions of the vaults are arranged square piers, that stand opposite thin pilasters on the walls. From these detached piers extend transverse arches at such distances as to produce square bays between them, that are covered by simple cross vaults without ribs. Between the piers of the external wall stand columns, that support on both sides projecting impost stones; above the middle impost a corbel affords a greater projection, so that two larger arches could be arranged together with four smaller ones beneath them. Meanwhile not all wings of this aisle are alike in architecture. At other places stand only two columns with three arches, the middle one being wider than the two side openings between the two piers. The entire window architecture has been recently rebuilt, so that from its character an accurate determination of the time in which the work originated is scarcely possible. We may believe, that it was erected not too long after the completion of the church at the middle of the 11 th century, and would therefore place it at the change from the 11 th to the 12 th century.

The form of cloister found here continued substantially determinative for the Romanesque cloisters of Germany; but in their enclosures were developed a great abundance of charming solutions by the alternating arrangement of the columns, by differently graduated heights of the openings, and by varied dimensions and treatment of the piers.

45. Puy-en-Velay.

An essentially different conception of architecture is shown by the cloister in Puy-en-Velay represented in Fig. 39³⁰, which was formerly ascribed to the 10 th century, but which is rather to be placed at the close of the 12 th century, corresponding to the better determined sequence in time of the similar Italian buildings.

Note 30. From Viollet-le-Duc. Vol. 3. p. 415.

Likewise for it the arcade stands on a thick parapet wall 1.48 ft. high, not shown in our illustration. It exceptionally forms undivided openings on rich compound piers, whose col-

columns, as representatives of the so-called protonenaissance of this southern region, seek to imitate the antique Corinthian order. The rich ornamentation with inlaid patterns in stones of different colors is derived from a frequently occurring art tendency in the time mentioned and in that country.

46. Gothic Cloisters; Heiligenkreuz and Aix-la-Chapelle.

With the progressive development of all architecture into a more fluid treatment of forms, and in particular through the influence of Gothic conceptions of forms, the cloister system received a more animated shape. Greater gracefulness came to the supporting parts, greater delicacy in the membering, singular freshness in the ornamental work; but the general arrangement remained substantially the same. Thus the cloister at Heiligenkreuz near Vienna ³¹ differs only by the graceful subdivision and the slenderness, even thinness of the columns, from the work of the 12th century. Then the cloister of the Cathedral at Aix-la-Chapelle (Fig. 31 ³²) has yet essentially Romanesque general proportions; but the division arches of its external wall rest on slender undiminished column shafts with Gothic bud capitals; their form is pointed. Two great division arches rest on a double series of such small columns; for the small intermediate arches are set single columns, and both in the spandrels of the main arches as well as those of the smaller intermediate arches graceful quatrefoil openings are finely cut.

Note 31. See Heider, G. R., von Eitelberger & J. Hieser. *Mittelalterliche Kunstdenkmale des Oesterreichischen Kaiserstaates*. p. 48 and Pl. 4. Stuttgart. 1858.

Note 32. From Bock, F. *Rheinlands Baudenkmale des Mittelalters*. Cologne & Neuss.

47. Zwettl.

More resultful and severer in form was Gothic art employed in the cloister at Zwettl, even if here also some round arches have remained in the world of form. (Figs. 32, 33 ³³). As in 48 Aix-la-Chapelle the division arches rest according to their rank on single or double columns; on the other hand, only the spandrels of the main enclosing arches are there accented, each being perforated by a sexfoil within a circular enclosure. V

Very boldly graduated projections in the interior bear the vaults furnished with heavy ribs; relatively heavy buttresses externally support these. In contrast to the cheerful love of ornament of the preceding example, is here indeed emphasized purposely the expression of the earnest and severe, contrasting with which, the graceful and right boldly loaded little division columns in the middle supports had to form a sharp difference.

Note 33. From the publications of the Wiener Bauhütte.

49. 48. Maulbronn.

The examples heretofore given all form open aisles, which were nowise intended to be enclosed by glazing. This entirely corresponds to the original idea of the cloister, that has never departed from this arrangement in southern countries. In the north the progressive refinement and effeminacy certainly bring with them, that at least in the wealthier cloisters men took thought to secure protection from weather by glazing the openings. One of the oldest designs of this kind is the southern wing of the cloister in Maulbronn, originating about 1225. It is characterized again by the peculiar combination of a very dry and massive general design with the most graceful treatment of some parts, here the supports of the vaults. (Figs. 34 to 38 ³⁴).

Note 34. From Dohme, R. Geschichte der deutschen Baukunst. Berlin. 1885 - 1888. -- Paulus, E. Die Zisterzienser Abtei Maulbronn. Stuttgart. 1873 - 1879.

It has a width of 14.76 ft. with 16.4 ft. height of crown; the lengths of the separate divisions of the vaults are likewise 16.4 ft. The vaults are hexapartite; the rear wall of the passage is entirely smooth below; the imposts of the vaults project from the walls on a graceful arrangement of consoles and columns; on the contrary on the window side are arranged strongly projecting wall piers with five small columns attached to each; only for the intermediate ribs is found the same arrangement as on the rear wall. In the halves of the vault formed by the intermediate ribs are slender, simple pointed windows, that are furnished with the usual shallow grooves for glazing. They include a strong wall pier between them. On t

the exterior they are further bordered by two small columns, that support a moulded pointed arch. As in Zwettl also here strong buttresses are arranged to correspond to the inner main arch, so that with the wall and the projection of the pier an abutment 7.55 ft. thick opposes the pointed arch of but 11.6 ft. clear span. Yet the impression here is also not heavy, and the airy poetry, which lends such peculiar charm to the works of the first half of the 13 th century, is fully and richly expressed here.

How greatly in that century the custom still varied in relation to glazing the cloisters, we see in the example just described. The adjacent western wing of the cloister at Maulbronn was arranged as an open passage a good generation later (Figs. 39 to 41³⁵). In all its forms of detail it is designed for a milder and more delicate effect; of especial charm, just in comparison with its predecessor, is the combination of graceful and quite developed forms of tracery with the massy surface of the still imperforate spandrels. Since the master of the building showed himself in everything else fully acquainted with the rich forms of Gothic, we may well see in this returned opening of the windows a reference to a combined effect of this with the older works.

Note 35. From Eisenlohr, F. Mittelalterliche Baukunst im südwestlichen Deutschland und am Rhein. Heft. 1 - 5. Cistercienser Kloster Maulbronn. Karlsruhe. 1853. - 1857.

40. S. Jean des Vignes at Soissons.

In France, the native land of Gothic forms, men had naturally advanced farther in their use at the same time, but likewise wavered between open and glazed openings. Frequently an intermediate path was struck out there, when the upper openings in the tracery were glazed, but for the lower portion was retained the beautiful effect of the free and graceful small columns. We give in Fig. 42³⁶ one of the richest cloisters of this kind from the Monastery of S. Jean des Vignes at Soissons. The custom of entirely enclosing the cloisters by glazing seems to have not occurred in France; on the contrary it became generally common in the 14 th century under the weather conditions of Germany.

Note 36. From Viollet-le-Duc. Vol. 3. p. 445.

50. Franciscan Monastery at Bozen.

However much the interior of such a passage gains in comfort, just as much does the arrangement of the windows lose in individuality. The architectural systems of such later cloisters scarcely differ in the forms of buttresses, windows and mouldings from the forms employed on chapels and other church buildings of small scale. Meanwhile among the later examples are found very beautiful works; particularly are there developed on them all the arts of the late Gothic vault forms in the richest measure. The cloister of the Franciscan Monastery at Bozen, which is given in ground plan, section and internal view in Figs. 43 to 45³⁷, show how these very elevated acquisitions of the stonecutter's art combine with the permanently preferred in the South, the long open porticos into an entirely uniform general form.

Note 37. From drawings in Wiener Bauhütte.

There are but few indications, by which we can produce the extraordinary wealth of precious architectural creations according to the main stages of development, and which the middle ages have created in harmonious cloisters. And we can but merely refer to the treasure of details in perfected form, that just in these buildings devoted to thoughtful reflection, give expression to the rich thoughts of the mediaeval mind on bosses, corbels of vaults, capitals, lintels of doorways etc.

51. Fountain Houses; Unser lieben Frauen at Magdeburg.

We have previously stated, how men knew how to animate the severely restricted movement of the uniformly repeated bay of the cloister by alternating treatment of the elevated parts, and how many of such buildings were heightened in their charm, by not being completed at one time, but in instalments, thus reflecting the mode of thought and abilities of different generations, and then fused into a united harmony. In another way then the joy in the animation of strictly ordered architecture served in the arrangement of charming little fountain houses, that originated in the customs of the Benedictines and Cistercians, and are frequently found in the more important foundations. We have already seen such a monumental fountain

on the plan of the Monastery of Canterbury, while it is not preserved at Fontanella. In the earliest time and in simpler conditions, men were satisfied with a detached fountain in the middle or in a corner of the cloister, for example, such as we find arranged in the court of the House of the Order in Riga. (See Plate adjoining page 41). One of the oldest fountain houses is preserved in the Premonstrant Monastery Unser Lieben Frauen at Magdeburg, and it forms a plain circular building with a spherical masonry roof, having on the three detached sides great niches, opening in the lower story by peculiar arcades. Fig. 46³⁸ may afford a view with what boldness dry masses and graceful forms of details are contrasted here, and how precious views into the open cloister garden are here produced. The upper story received the archives or the library of the monastery, a combination frequently a favorite elsewhere.

Note 38. From my own photograph.

52. Zwettl and Maulbronn.

In the progressive development of architecture the form of the fountain house took a characteristic part. Instead of the heavy and picturesque kind there already occurred in the early Gothic fountain house at Zwettl (Figs. 47 and 48³⁹) the graceful animation of all surfaces and the rich grouping of bold systems of windows with columns. In their place then occurs fine perforated tracery with an ever increasing avoidance of solid surfaces. While this fills with graceful filigree the entire surfaces remaining between the supports required, it creates an ever closer connection between the cool interior of the fountain house, animated by the plashing of the fountain, and the garden with its rustling shrubs and fragrant flowers. (Fig. 49⁴⁰).

Note 39. From drawings in Wiener Bauhütte.

Note 40. From Paulus.

It is perhaps the finest impression of fanciful and comfortable purpose, to which mediaeval art was permitted to attain. For love of such dreamily beautiful effects, these windows we were left unglazed as a rule, and the resulting discomfort in the winter was accepted in the bargain. More rarely the view into the cloister garden was abandoned, and the windows of the

fountain house were glazed. For the entirely changed effect produced thereby, the great nine-sided fountain house of the monastery of Heilighkreuz may serve as an example. (Figs. 50, 51 ⁴¹). In it the window sill is already placed above the height of the eye, and the view through the graceful gablets of the arcade strongly shows the closed nature of the lower portion of the wall, so that the innate harmony of the interior and the exterior is entirely excluded. The effect is therefore placed in the most graceful execution of the internal architecture and in the rich play of color of the artistic glazing.

Note 41. From drawings in Wiener Bauhütte.

Of the rooms that lie adjoining each other around the cloister, the chapter hall takes the first place in order of rank. Here assembled the monastery brotherhood for all solemn affairs, for the reading of the Holy Scriptures, for common counsel on important internal and external affairs of the monastery, as well also for sitting in judgment on the misdeeds of individual members. Here punishment was awarded before the collected convent, and for all, even for the slightest transgressions, formal and humble apologies were made. In many cases the room was prepared for such gatherings by fixed stone seats extending along the walls; opposite the entrance was arranged an elevated seat for the abbot. Likewise the pulpit for the reading of the daily chapter from the Holy Scriptures was occasionally permanently constructed of stone, whereof at Ossegg in Bohemia has been preserved a beautiful example. As previously stated, the chapter hall was first gradually inserted in the plan of the monastery. There originally served for the same purpose the aisle of the cloister adjoining the church. Indeed in memory of this origin is the connection of the room with the cloister, and thereby with the free interior of the court in by far the most cases has been preserved. Almost always there opened toward it wide windows not arranged for glazing; even the entrance doorway was without any closure, so that the ideal unity of the interior was unbroken. Fig. 13 represents a view from the chapter hall at Maulbronn into the cloister and may explain this.

Corresponding to its high dignity, the chapter hall was alw-

...the series of inserted supports, thus being three-sided, and first in later times on a single strong middle pier. As a peculiarity of the staircase is to be mentioned, that they always placed a small flight with the stair of 1. This is common with their chapter halls.

54. Refectory.

The architecture of the refectory stands next to the chapter hall. In the earlier time this room was also lighted when covered by high and proud vaults; later with the increasing efficiency, men preferred designs of a lower and more comfortable form, that was provided for maintaining the same intensity of light without the wooden ceiling, the refectory being the same as the chapter hall in design. In the German refectory at Bamberg (1180-1190), it was lighted by a series of small windows, that the light fell on a small round refectory, the floor of a comfortable winter refectory.

In the later centuries the refectory, like the chapter hall and those with wooden ceilings, are mostly arranged in two aisles with a middle row of supports; yet there are found, especially in the earlier architecture, vaulted dining-halls of a single aisle. An example of such single aisle halls is the hall of the refectory of the church of St. Michael in Bamberg (1180-1190), that on account of its form is often held to be a chapter hall, and for design with a wooden ceiling is the best. The hall of the refectory at Bamberg is the same. For

fast and cheerful lighting by high and wide windows, care is especially taken as a special necessity, and the refectory is architecturally treated like the chapter hall, that is, by an extensive series of small windows, that the light falls from the high triforium over the aisle. Because in the dining hall, that was needed for this purpose in the refectory of St. Michael in Bamberg is the same as the chapter hall, the master's refectory at Bamberg was a beautiful hall, accessible by a small windowed doorway for the reader.

For scientific and artistic as a variety of the construction of the refectory at the early period in the German architecture.

always vaulted, if the means permitted, indeed mostly on a double series of inserted supports, thus being three-aisled, and first in later times on a single strong middle pier. As a peculiarity of the Cistercians is to be mentioned, that they always placed a small chapel with the altar of S. John in connection with their chapter halls.

54. Refectory.

In expensiveness of treatment the refectory stands next to the chapter hall. In the earlier time this room was also liked when covered by high and proud vaults; later with the increasing effeminacy, men preferred designs of a lower and more comfortable sort, that were provided for heightening the cheerful impression by wooden wainscoting and wooden ceilings, often ornamentally carved. See the representation of the refectory in the Carthusian Monastery at Nuremberg in Chapter 8. (Fig. 398). If both could be secured at the same time, then the high vaulted hall was used as a cool summer refectory, the other as a comfortable winter refectory.

In the larger monasteries the refectories, both those vaulted and those with wooden ceilings, are mostly arranged in two aisles with a middle row of supports; yet there are found, especially in the smaller monasteries, undivided dining halls of a single aisle. As examples of such single aisle plans is the hall covered by vaults of great span at Heilsbronn near Nuremberg, that on account of its form is often held to be a church room, and for designs with a wooden ceiling is the beautiful hall of the Benedictine Monastery at Stein on the Rhine. For festal and cheerful lighting by high and wide windows, care is generally taken; as a practical peculiarity appears frequently an architecturally treated desk for the brother, that had to read from the Holy Scriptures during the meal. Famous is the charming pulpit, that was erected for this purpose in the refectory of S. Martin des Champs in Paris by Pierrre de Montreuil; likewise the master's refectory at Maulbronn contains a beautiful gallery, accessible by a small winding stairway for the reader.

More modestly and mostly as a vaulted room of low proportions is the refectory of the laity treated in Cistercian monasteries.

Its location in that wing of the monastery next the farm court, thus to the outer world, brought with this, that besides its immediate destination, it was further used for all kinds of other purposes, for the first reception of foreign travelers, for business transactions of all kinds, and the like. Hence it also occasionally bore the name of the hall, which in the larger secular courts served for the same purposes, the great hall.

55. Dormitory.

The sleeping hall or dormitory was usually by far the largest room of the monastery. Already in the Monastery building of Desiderius at Montecassino (Art. 27), it attained a length of 200 ft. with a width of 24 ft. It regularly occupied the entire length of the eastern wing adjoining the choir in its upper story and was in direct communication with the church by a stairway; further from it a second stairway usually led down to the ground story of the cloister. So long as in the sense of the ancient Benedictine rule it was utilized as an undivided room, in case of sufficient means it was sometimes vaulted in two aisles, or sometimes in three. These vast halls attain in Eberbach, Altenberg, etc. dimensions of 39.4 × 164.1 ft. to 42.7 × 229.7 ft. or even more. They express in the grandest and most solemn way^{by} the long uniform series of beautifully curved vaults and powerfully treated supports, the idea of the common following of Christ, and the power of the idea of the Order, derived from the equality of all brothers. In later, more practical, and at the same time more effeminate times, these mighty halls indeed became less pleasant. Indeed after the prototype of the mendicant Orders, who mostly used numerous separate cells as sleeping rooms in the different wings of the upper story, the older Orders after the beginning of the 16th century dropped the idea of a common sleeping room. Thus many an old hall was then simply divided by the erection of thin partitions, destroying its internal effect. But besides this, at the same time a peculiar form was developed for the new arrangement, easily recognized from the exterior. For example in Bebenhausen and also in the Dominican Monastery at Brunswick with the entire rebuilding of those parts, the low cells were arranged along both sides of a high passage extend-

arranging high into the attic, and into central rooms was
lighted by small lantern windows set in the gable.

88. Warm Room.

712. All the arrangements in the treatment of the interior
and skillful development in details. All the rooms as far dis-
posed were still without an arrangement, which as necessary
around themselves with in the most robust condition. There was
nothing in all the arrangement for heating. There were a lot
of these were the matter of living with the different kind
of our own, of which especially the collection of the late middle ages.
Specially distinct from the more prominent character and which in
this life. All part of central in the old style, which was
at once satisfied, though not everywhere, by the arrangement
of a warm room of central, a collection that by later times,
for removed from an organization of modern life, was instead
transformed into "warmest chamber", and was connected with
familiar decorations of the nature of the old manner of dis-
posal. It was often supplied by a kind of air heating, that
will be described in another place, and then is related to the
a half story above the living story, as for example in living-
room. In other cases it was heated by charcoal stoves, at 1
least there are for me indications, that stoves in the living
were unknown in such rooms as related. These were generally
by visited for only a time and for aid by those visiting rooms.
is separated from the small size of the room, which in the living
The example, has an area of only about 107.4 sq. ft. against
about 107.4 sq. ft. for the brother's room.

60 extending high into the attic, and this central passage was lighted by great tracery windows cut in the gable.

56. Warmed Room.

With all the expenditure in the treatment of the interior and skilful development in details, all the rooms so far discussed were still without an arrangement, which we ourselves cannot dispense with in the most modest conditions; there was lacking in all any arrangement for heating. That throws a clear light upon the custom of living entirely different from our own, of these monastic societies of the late middle ages, chiefly derived from the more prominent classes and eminent in high life. All need of warming in the cold winter period was at best satisfied, though not everywhere, by the arrangement of a warmed room or chamber, a designation that by later times, far removed from an understanding of monastic life, was indeed transformed into "wormwood chamber", and was connected with fanciful descriptions of the customs of the old monastery brothers. It was often supplied by a kind of air heating, that will be described in another place, and then is raised about a half story above the ground story, as for example in Maulbronn. In other cases it was heated by charcoal braziers; at least there are for me indications, that stoves or fireplaces were unknown in such rooms as existed. That they were generally visited for only a time and for aid by those needing warmth, is apparent from the small size of the room, which in Maulbronn, for example, has an area of only about 430.6 sq. ft. against about 1076.4 sq. ft. for the brothers' room.

Chapter 2. Courts of Princes and Nobles. Palace and Master's Residence.

57. Basal Conditions of the early Middle Ages.

We have already seen, how by Charlemagne's mighty rule so much enrichment for existence was won for the North, but since these acquisitions were restricted to the greater palaces and royal courts, the national style of architecture was so far left unchanged, that even in the royal farmsteads of the smaller size, we cannot recognize its influences. The succeeding periods were not adapted to allow these impulses in architectural affairs to become deeper. Of the confusion and terrors of this dark century, we can hardly form a conception. Constant quarrels between the great persons consumed the powers of the country; foreign enemies seeking booty broke in from all sides on the unfortunate inhabitants. As far as Paris, indeed even to Tours the Normans passed up the stream scorching and burning. Across the Lake of Constance and the Rhine to Gaul and in the south to middle Italy wandered Hungarian and Slavic robber hordes devastating everything. And on the coasts the inhabitants of the coasts around the Mediterranean Sea desolated even ancient famous harbor cities; the inhabitants sought refuge from the sacking by Saracenic sea robbers farther within the country or on the tops of steep mountains. This was not a time in which the hothouse plants of the Carolingian court art could take root and could further develop themselves in the people.

Only in the change of the social stratification, which then occurred, was the foundation laid for new forms of progressive art. The possession of an independent farmstead had been at all times the mark and the pride of the freeman, and under the protection of national laws, had also sufficed to assure to its possessor an independent existence for himself and his dependants. Now the situation of this free people under the supremacy of the great and general insecurity became ever more difficult. In ever increasing numbers they gave up their freedom as the price of more powerful protection, when they transferred their farmstead to one more powerful for its possession, and preferably to the Church, in order to receive it again by payment of quit-rent. Thereby they renounced the preference

belonging to them, to independently appear for their right before the court of their national comrades, but rather subjected themselves to the court tribunal made independent and patriarchal for his tenants by the lord. Thus vanished the status of the freeman, and there was formed as its last remnant gradually an entirely new, but closely restricted state of powerful land-owners, from which later proceeded the families of the princes, counts, and of the other high nobility.

Just as little as free agriculture could trade and traffic develop any further; likewise in their situation must rather appear deterioration than improvement. But therewith also appeared the remains of the city inhabitants in a further decadence instead of in a richer development. Thus first the rural farmstead in its plainest form corresponding to pure necessity remained the residence and the centre of the civilization of the greater number of people. When beneath the powerful sceptre of the Saxon emperors, at least in Germany, safe conditions were again created, it first availed and also long afterwards to heal the wounds, that the wild and lawless period had made in the wide circles of the people. It had still lasted in other countries, until art also began to ennoble the well-being of the people. First the newly beginning development was supported by the previously mentioned landed nobles, who might now be of a spiritual or of a secular nature.

58. Buildings of the Saxon emperors; Merseburg and Siptenfeld.

The nature of the architecture of the spiritual nobles has been described in the preceding Chapter on the monasteries and foundations. We now turn to the residence architecture of the important class, that had its climax in the emperor, since they themselves chose from the mightiest of their class itself the worthiest for the imperial crown. In these circles appear the views once expressed by Charlemagne on what pertained to a dignified representation of imperial power and highness, also held in the following period and forming the basis of imperial architecture. In the most disturbed times of that dark century, men must certainly be satisfied to find safety from enemies and shelter behind earthen walls and wooden buildings.

The assembly were the fortifications in any manner against a
 hostile devastation, from the west wall ending in a corner-
 line. Already Henry I according to old tradition built in War-
 wick a stone palace with an inner castle wall, in which was
 represented in mural paintings the events of the famous battle
 of Marston. Likewise the year 1005 is as an historical fact
 the existence of a palace with corner tower in the castle
 at Oxford, which corner tower was called the tower. Of the
 building of the tower, there remains to us nothing
 considerable remains and their destruction, yet the remains
 of tower foundations always remain as to form a general con-
 ception of the plan of such royal houses. Many places, for ex-
 ample, Oxford in the late Middle Ages, seem to have been built
 without and small, without any fortifications having the walls
 to guard, that as a building, they may have formed a favor-
 able position for a royal residence. For instance, would be
 that in fact, then to transfer the position of royal courts
 and the present court life to these few more definite times.
 And also today the situation of the earth slowly return to the
 active state forest enclosure, and there occasionally complete
 important architectural affairs. The remains found in Oxford
 in their entire condition certainly contain the possibility in
 a high degree, that it was first built as a little fortified
 house on the site of the industrial town. Likewise the so-called
 "the tower" (also called) near Oxford is entirely an
 certain in the plan and probably was later destroyed. In early
 and different representation of domestic life in the early six-
 the step that of these remains is given by the following
 plan, better described in its date. By excavations in the
 year 1911 in the late Middle Ages the foundation walls of an im-
 portant castle were brought to light, that are represented
 as the remains of an industrial town of the twelfth century
 value, that was first mentioned in the year 1005 in a document
 of Ours. It is a plan of the castle, originally only en-
 closed by a wall, later by a wall and also a ditch.
 Nearly the middle of the tower was a corner tower, the
 building was built. The plan of the foundation walls
 so far as, that in the lower portion in the illustration

But scarcely were the borders assured in any manner against hostile devastation, than the great model enticed to competition. Already Henry I according to old tradition built in Merseburg a stone palace with an upper festal hall, in which were represented in mural paintings the events of the famous Hungarian battle. Likewise the year 1002 is to us traditional for the existence of a palace with upper story in the Palatinate at Pöhlde, beside which rose also wooden dwellings. Of the buildings of the Saxon emperors, there remain to us neither considerable remains nor clear descriptions, yet the results of recent excavations always permit us to form a certain conception of the plans of such royal courts. Many plans, for example, Bodfeld in the Harz Mountains, appear to have been quite unimportant and small, without our therefore having the right to doubt, that as a hunting box, they may have formed a favorite stopping place for a mighty monarch. For nothing would be more incorrect, than to transfer the opinion of modern comfort and the present court life to those far more original times. And also today the mightiest of the earth gladly return to relatively plain forest seclusion, and there occasionally complete important governmental affairs. The remains found in Bodfeld in their entire conception certainly permit the possibility in a high degree, that it was first built as a little fortified house on the site of the imperial court. Likewise the so-called "Hohe Schwarm" (high crowd) near Saalfeld is entirely uncertain in its age and probably was later restored. An entirely different representation of domestic life in the early middle ages than that of these remains is given by the following plan, better determined in its date. By excavations in the year 1888 in the Harz Mountains the foundation walls of an ancient establishment were brought to light, that are represented as the remains of an imperial court of Sippenvelt (near Siptenvelde), that was first mentioned in the year 940 in a document of Otto I. It is a plan of irregular form, originally only enclosed by a wall, later by a wall and also a ditch.

Nearly the middle of the court area is occupied by the main building A (Fig. 52⁴²). The form of its foundations can be so laid out, that in the lower portion in the illustration are

and on lower level room. The most likely construction is that
wall, indicated by concrete set on the outer walls. In the
upper story part of the house is a large central hall, or
corridor, the entire extent of the house. The building is and
O served as a single and small on account of its form and form-

tion and possibly east and west. I certainly turned the corner
channel. In 1, 2 and 3 way we see buildings for household pur-
poses (kitchen, bath, and entrance) and for recreation; 4 and
5 are occupied as a hall, and 6 as the hall. If we con-
sider, that at least half the buildings placed on stone in-
tegrations, there must have been a number of slight wooden ar-
rangements for entrance and other subordinate purposes, there re-
mains a plan, that seems to have the greatest similarity to
the previously mentioned Germanic or Celtic house plan.

(Art. 16.)

Note 12. From Germanic. 1. December. 1882. p. 15.

59. Gray House at Winkler.

A plan of similar date of origin remains to us in
the so-called Green House at Winkler in the Germanic (Art. 16).
It is an important dwelling, designated by ancient tradition
as the house of the famous architect and builder, Green-
house, who died in the year 1812 at Winkler, probably erected
on at least rebuilt certainly 200 years later with the use of
some ancient Germanic plan. He was born of it in similar
circumstances, as there shows us by the royal court in Winkler-
house. It was built after the plan of the house then in use
by the architect, and accordingly to the same plan of
the house, this is more easily explained from the historical and
the house. But on account of the good preservation, as a val-
uable monument, it may well illustrate the Germanic house
plan in the Germanic. It has been and undoubtedly is

Winkler, 1. 1882. p. 15.

The house plan shows a simple rectangle of about 25.0 x 12.7
m. It was extended at one end about 12.7 m. by a small and
very large addition. This addition is one story with a
small porch leading to the main building, and it contained
the kitchen and a small dining room, and corresponding to the
main building, and was built in a similar house.

two or three smaller rooms, the upper story containing a great hall, subdivided by supports set on the cross walls. In the upper story must we then again assume a great festal hall, occupying the entire extent of the house. The buildings B and C served as stable and shed; on account of its form and location accurately east and west, D certainly formed the court chapel. In E, F and G may we see buildings for household purposes (kitchen, bakery, and bathroom) and for retainers; I and K are explained as dog kennels, and L as the mill. If we conceive, that at least besides the buildings placed on stone foundations, there must have been a number of slight wooden structures for servants and other subordinate purposes, there results a plan, that seems to have the greatest similarity to the previously mentioned Carlovingian principal court Asnapio. (Art. 16).

Note 42. From Centralb. d. Bauwesen. 1892. p. 15.

59. Gray House at Winkel.

A ruin of similar date of origin perhaps remains to us in the so-called Graues Haus at Winkel in the Rheingau (Fig. 58⁴³). It is an important dwelling, designated by ancient tradition as the House of the learned Archbishop and courtier Hrabanus Maurus, who died in the year 849 at Winkel, probably erected or at least rebuilt certainly 200 years later with the use of some ancient ornamental pieces. We may think of it in similar surroundings, as those shown us by the royal court in Siptenfelde. Of the entire plan indeed there has come down to us only the dwelling, and corresponding to the more modest rank of the owner, this is more simply arranged than the imperial palace there. But on account of its good preservation, as a valuable supplement, it may well illustrate the preceding example.

Note 43. From Luthmer, F. Die Bau- und Kunstdenkmäler des Rheingaus. f. 222. Frankfurt O. N.

The ground plan forms a simple rectangle of about 36.0 × 42.7 ft., that was extended at one end about 13 ft. by a small and visibly later addition. This extension is one story with a shed roof leaning against the main building, and it contained the kitchen and a small side room, that corresponding to most ancient custom, must have been placed in a separate house.

The entrance to the house is on the left side of the street. The entrance is a small porch with a gabled roof. The porch is supported by two columns. The porch leads into a small hall. The hall is divided into two rooms. The room on the left is a bedroom. The room on the right is a bathroom. The bedroom has a bed, a dresser, and a chest of drawers. The bathroom has a bathtub, a toilet, and a sink. The hall also has a closet. The house is built of brick. The roof is made of shingles. The house is in good condition.

Furthermore the stairway to the doorway found in the gable of the upper story must have ascended there. Thus it originally lay in the open air and produced no connection between the two stories of the house. The entrance doorway of this addition shows a very archaic and simple gable ornament. The main building is divided in the lower story by a longitudinal wall into two rooms, sparingly lighted by small windows, and accessible by a large round-arched doorway, in its arch alternating stones of different colors in a regular arrangement. In the upper story there lies first an attic of half height over the kitchen, from which the before mentioned doorway leads into the main building. Judging from the now walled up group of windows of the south wall, this must originally have formed a single great hall; for this group, increased to four windows, occupies exactly the middle of the longer wall. Now in this, as the result of a rebuilding, is a partition wall extending from the eastern gable wall. One may assume that adjoining it was a cross wall parallel to the gable wall; for we obtain as the actual dwelling of the owner a hall about 19.7×31.2 ft. with two small rooms lying behind it and a small house chapel accessible by the doorway A. The larger of these rooms is shown to be heated by the remains of a fireplace recess. Probably a remnant of this fireplace is the piece of moulding B found in the house, of late Romanesque form. Both rooms exhibit the ornamental arrangement of the small window groups in alternating and carefully developed form. The graceful small columns at the window F possess a completely developed cushion capital, that in opposition to the Byzantine-carlovingian primitive type is furnished with an abacus, thereby forming a support for the date previously given. Since the section M-N-O-P for this portion of the building also shows another upper series of windows, then over these smaller rooms might have been a story of sleeping rooms. In contrast to the small windows of this living room, that indeed could be closed by shutters, the southern side of the great hall still exhibits the remains of a row of wide and larger arched windows, that admitted abundantly light and air to this room, and gave it the characteristics of a solar. We might well assume, that its supports were composed of graceful columns. Their arches consist of alternate courses

of small ashlars and Roman bricks, such as are usually found in the 11 th century on the middle Rhine; the still remaining impost has an expressly Romanesque form. As further ornament served at the ends of the eaves of the roof projecting stone corbels in the form of bears' heads, shown in our illustration C. They may be regarded as the side endings of a projection of the roof serving as the main cornice.⁴⁴

Note 44. There should also be mentioned the work, which appeared during the printing of our book. Etchholz, P. Das älteste deutsche Wohnhaus (Straßburg. 1907). The author regards the rear portion of the building about 28.0 ft. wide as the original building of Hrabanus Maurus, and the front portion as an extension, that was likewise executed in the Carolingian period. -- The condition of the house does not permit an absolute decision; for many reasons, a portion of which are derived from our description of the building above, we adhere to the given date.

In this connection of a separate lower story with the arrangement of a great hall, as well as the smaller living rooms in the upper story, and further in the arrangement of the external stairs, the whole shows in a simple but very characteristic manner, what was then required for the dwelling of an important court. Here the hall for the festal reception and entertainment of the guests and retainers was made prominent above the other buildings by the lower story, thereby producing the impression of importance. Care for the comfort of living was taken in the subordinate rooms, so far as this existed in the sense of that time.

60. Hall of William the Conqueror on the Bayeux Tapestry.

That for the views of that time the palace with the "hall", as the most important part of such a royal court, is apparent. Then to the simple man, who before and afterwards occupied his plain hut, first the several stories of such a palace, together with its stone construction and its ornamental columns, the construction of freely spanning arches etc., must have appeared as truly wonderful works. Thus were the palace and especially the existing festal hall in its upper story were chosen in pictorial representation as representative of the royal household. The famous Tapestry of Bayeux, an extensive embroid-

embroidery from the end of the 11 th century, on which the deeds of William the Conqueror are represented, gives us such a picture. (Fig 54 45). Indeed the forms of the building are so carelessly treated with the highest naivety, that even the decision must be difficult, whether a stone or wooden structure be meant (only the innate probability is in favor of the latter); the railing of the upper story is entirely lacking, so that the lower half of the carousing retainers would already extend into the drawing of the lower story, if they were to be drawn; likewise the representation of the walls and of the supports of the solar is substantially avoided, in order that the artist may be better able to represent the essential facts, the joyful carousing of the company. Nevertheless we can also determine here the plan of the independent lower story and the uncovered stairway arranged at one end as characteristic ideas. 46

Note 45. *From Kulturhistorisches Bilderatlas. II. Mittelalter. By A. von Essenwein. Pl. 26. Leipzig. 1883.*

Note 46. An undeniable similarity to the given representation is shown by the house of the Abbot, "aula nova" on the ancient plan of the Monastery of Canterbury (See Plate next page 25). According to a very expensive conjecture, the famous Carolingian building in the Monastery of Lorach was not a gateway portico, but represents an important dwelling (See Schwetschal, *N. La halle germanique et ses transformations. p. 9. Bruxelles. 1907*). It actually resembles in a high degree in its lower arched hall and the upper enclosed hall story the previously mentioned examples.

61. Romanesque Palaces in Germany.

In this emphasizing of the festal hall is reflected in the clearest manner the after effect of ancient German customs. As every more powerful head of a race or of a settlement had then built his prominent hall, in order to gather about himself therein his warlike followers for festal society and for counsel, then each one of the great landed nobles, and first of all each of the princes, required such a room in his residence. For by the changed classification of the mass of the people, and especially by the increase of the serfs, not only the prince of the country, the public officials, the court or

the royal messenger, but each large proprietor, every church dignitary, had to transact affairs of justice, jurisdiction over the militia, and official activities of all kinds. Besides it availed for regulating the conditions of the "family", i.e. in the ancient Roman sense the community of all persons economically and legally dependent on the master by orders and by common counsel, also to create the solemn background for the payment of rents and for the symbolical homage for legacies. Likewise it was utilized for celebrating festivals, that by gathering together the splendid knights was suited to carry afar the fame of wealth and power.⁴⁷ Thus arose everywhere in the German provinces, with the return of better times, palaces of the emperor, of princes and masters; relatively numerous do they remain to us, especially from the period at the end of the 12 and the beginning of the 13th centuries, when the strength of the German people, aroused by the impressions of the crusades, first strove to take a more artistic and splendid part. Therein is it characteristic of the power of the German rulers, fast rooted in their own land and based on the usual command of faithfulness, that such a palace architecture retains throughout the expression of cheerful frankness, not hardened by any sort of arrangements for defense, showing mistrustful fear.

Note 47. The word "curia", which was employed for secular as well as for spiritual, for large as well as for small courts, according to its origin, denotes, what the curia, thus the open court and the hall adjoining it, the palace, also joined to the ancient curia, to the assembly room in which the curials met in order to observe sacred customs, to speak of common affairs, and to hold solemn feasts. The expression "malbergium", common in the Merovingian and Carolingian periods (the room containing the "mal", i.e., the public court of justice), and which was still usual in France in the 12th century, and was Frenchified as "mauberge", shows that these halls or buildings were not built in the first place as festal and banquet halls, but for such earnest and solemn labors, such as served for the great transactions of the emperor's government, for courts of justice, for investitures, for the reception of envoys, etc.,

And that indeed at first as in ancient Rome in the curias, only beside the courts solemn meals were held therein, where the monarch was surrounded by his court, and under some circumstances was attended by his wife and the women, but did not enjoy himself as a private man, but in accordance with his dignity fulfilled his duties publicly (von Essenwein).

The German rulers did not dwell as monarchs in foreign lands; they did not need to retire into gloomy towers as dwellings (donjons), like the Norman conquerors. For them in ordinary times the attachment of their retainers formed a better protection than dwelling in massive fortresses. These conditions have found a poetical expression in the beautiful tale of the Thuringian landgrave, who obligated himself to extend a strong wall about the Wartburg within three days. And when the time had elapsed, he showed his palace surrounded by a closed chain of his armed vassals, that he had speedily ordered. Indeed we are told by history of wild combats of warlike parties, that according to the very animated representations of contemporary writers, at some times seemed to seize the entire country and to devastate it without recourse. But in this is much mere a appearance, that comes partly from the rhetorically exaggerated manner of writing of the monkish chronicles, partly from the unconscious transfer of modern conditions in war, such as affect the classified mass of the people to the deepest depths. Under the much looser conditions and obstructed by the defective means of commerce of those times, the struggles of the individual great man for power, that substantially fills the history of the 12 th century, indeed could never exert such vigorous influence on the life of the people. We may very well so represent to ourselves the actual conditions, that the storm of such internal contests, supported by not very numerous knightly followers, sometimes here and sometimes there, blustering through the land like a storm, indeed destroyed so much in its way, but also passed away as rapidly as it came. And everywhere appeared in the frequently intervening times the field of quickly springing flowers, so that the devastations could not have gone too deeply. Therefore the German emperor as a rule was satisfied with relatively few fortifications, that

extended around the widely spread plan of the court. Within this enclosing wall, under the protection of the "fortress peace" enforced by heavy punishments, there prevailed free traffic and open confidence of the inhabitants toward each other. Thus the hall building of the important court, for which the designation of "palace" was generally adopted, in Germany regularly dispensed with fortifications, but opened as freely as possible toward the court. It was not rarely designated by the word "aula" or court, thereby denoting that in reality it was still regarded as a part of the open court, on which the followers after the ancient German custom gathered under the open sky. Common just there to the older plans is the very plain form of a two-story rectangular structure, that contained in the generally enclosed lower story rooms of subordinate character, such as storerooms or shelters for the retainers, but in the upper story was entirely occupied by the great hall, whose walls were pierced by broad groups of windows toward the court.⁴⁸

Note 48. At this time, the best collection of drawings of these buildings is given by the Jubilee Part 26 of Denkmäler der Baukunst, published by the students of the Royal Technische Hochschule in Berlin. Abt. I. A comprehensive description is also given by Simon, K. Studien zum romantischen Wohnbau in Deutschland. Strassburg. 1902.

62. Castle Dankwarderode at Brunswick.

A very good representation of such a plan, as it was erected by one of the important princes, is given by the Brunswick Castle Dankwarderode. It is at the same time one of the oldest, and by the thorough work of Winter⁴⁹ has been entirely divested of the many later alterations, and was completed in the representation on the basis of the excavated remains of the foundations, and thus made more intelligible in connections than many others. In the preceding Heft of this "Handbuch" it was shown by the plan of the site,⁵⁰ as it was originally enclosed by several branches of the little Ocker stream, standing on a slight elevation together with the Cathedral. On the adjacent Plate is given a representation in Bird's eye perspective,⁵¹ that makes clear the location of the separate buildings

beside each other, the fortifications by a wall with towers, and an instructive view of the then commencing city settlement is afforded. Beside the cathedral and its cloister designed for the dwelling of the foundation canons, the building appears first as dominating the group. Protected by the broad arm of the Ocker flowing past, without special means of defense and with the castle chapel, it forms a portion of the enclosure of the castle. The actual living rooms, partly placed in the defensive towers, adjoin it at the side; smaller and less conspicuous structures for servants and for agriculture are to be conceived as scattered in the court after the ancient custom. Fig. 55⁵¹ gives the plan of the group of the ducal living rooms.

Note 49. See Winter, L. Die Burg Dankwarderode zu Braunschweig. Results of investigations in architectural history made at the order of the City Magistrates. Brunswick. 1883.

Note 50. First edition; Art. 56. p. 59.

Note 51. From Winter.

The hall building or Balace P rises in two stories with the considerable dimensions of about 49.2×137.8 ft. It contains in each story a great hall covered by beams, whose ceilings are supported by the central row of posts.

In the lower story are square piers decorated by inserted small angle columns, and connected by bold arches of cut stone, which receive the ceiling; in the upper story we may assume a lighter series of columns and a wooden girder. On the exterior the upper hall on both long piers is distinguished by a rich arrangement of triple columnar arcades with great round-arched window openings, that furthermore possess no arrangement for closure, while the lower story with plain and small windows is treated in subordinate form. A double portico lies before both halls on the court side; to that of the upper story leads a flight of steps, concerning whose form doubts may indeed exist. By covered passages are connected the living rooms of the castle, but at the same time are also to be reached from the court by a separate flight of steps. They are clearly subdivided into two but loosely connected parts; namely the dwelling of the ruler himself and of his retainers, and that of t

the women. The first comprises in the principal story but few rooms of considerable dimensions: the tower room D and the 12-13 living room F. From these two rooms the access is made to the other rooms of the palace. The tower room D is the most important as from the sofa of Chahremah in Aix-la-Chapelle. Some small rooms and a bathroom are situated in the tower room. The living room F is the most important of the palace. It is the only room of the palace in which the family lived. The living room F is the most important of the palace. It is the only room of the palace in which the family lived.

of the women, the smallest room at 2 was used as a bedroom. The living room F is the most important of the palace. It is the only room of the palace in which the family lived. The living room F is the most important of the palace. It is the only room of the palace in which the family lived.

other parts of the palace from the court. The living room F is the most important of the palace. It is the only room of the palace in which the family lived. The living room F is the most important of the palace. It is the only room of the palace in which the family lived.

82. House of the Emperor at Goshan.

The house is situated at Goshan and is famous as an artistic

the women. The first comprises in the principal story but few rooms of considerable dimensions; the tower room D and the main living room G, from which one may overlook the entire court, as from the solar of Charlemagne in Aix-la-Chapelle. Some small chambers and anterooms adjoin and partially enclose the very important three-aisled castle chapel. H. Yet farther south lies the dwelling of the women, again connected only by a covered passage. In the projecting tower C is found the chief apartment for the more intimate family life, "the private room of the women;" the smaller rooms at Q were used as sleeping rooms, as well as living and work rooms of the female servants. The lower story of this part of the building also contains all sorts of chambers with furniture and working equipment for the women. It was connected with the upper story by a stairway in the wall, so that it could be reached without passing through other parts of the palace from the court.

The entire structure is very instructive in the clear separation of the various parts; feast house, master's dwelling and women's dwelling, while it plainly shows, that the ancient custom of building one's own house for all purposes had in nowise died out. That the number of living rooms, considered according to modern views, appears small, it is then first to be considered, that in that time the social separation between ruler and retainers was much less than now. The descriptions of the poets in "Tristan", in "Parsifal" and in other knightly poems permit the relation between the two -- naturally entirely aside from the different conditions of civilization -- to appear similar in the community of living, about as exists today between a head farmer and his laborers. Thereby a multitude of separate rooms became unnecessary, which today seem indispensable under simpler conditions, and it came to this, that on the one hand festal gatherings could be carried on in the great hall entirely separate from living, and further that shelter was provided for the lower class of retainers in the lower story of the hall and in the subordinate structures of the court.

68. House of the Emperor at Goslar.

The most important in area and in location as in artistic

Additional wings and extensions have been added to the main building since its construction in the early part of the century. The main building is a large, two-story structure with a central tower and a series of wings extending from it. The building is made of brick and has a flat roof. The central tower is the tallest part of the building and has a clock face on its front. The wings are connected to the central tower by a series of bridges. The building is surrounded by a large lawn and there are many trees and shrubs in the grounds. The building is used as a school and there are many classrooms and laboratories. The building is in good condition and is well maintained. The grounds are also well kept and there are many paths and walks. The building is a fine example of early 20th-century architecture and is a valuable part of the local heritage.

treatment most expressive development, the design of such hall buildings has received in the emperor's House at Goslar. Men have long believed that they beheld in the building long preserved to us the Palace of the Emperor Henry III (1089 - 1056), built for himself in Goslar, thus placing a special historical value on the great structure as one of the oldest of its kind. Later investigation indeed has not been able to verify this. That Henry III indeed erected a hall building on this site is at best proved by the documents, just as that the Palace of Goslar was for nearly a century a favorite residence of the Salic emperors, and it also saw some splendid days under Barbarossa. But the architectural form of the building, and in particular the occurrence of trefoil arches in the substructure of the hall, must avail as compulsory evidence, that nothing of that building of Henry III has remained to us, that the existing palace is much later, and was probably built anew after its fall in the year 1132, then under Barbarossa extended by some additions. The entire palace then formed an extensive architectural group, that lay on a hill and rose effectively above the great fore-court, the present "kaiserbleek", and was then placed in connection by arched passages with the Cathedral of Henry III on the other side of the square, just as in the buildings of Charlemagne at Aix-la-Chapelle. But also the existing palace of that time was much disturbed by later rebuildings and made uncertain, particularly in the years about 1385, and finally by the modern and thorough restorations. A great part of the old general plan, namely all living and subordinate buildings, that extended around the great court between palace and cathedral, and likewise the cathedral itself, excepting its porch, have completely disappeared without traces. There yet exists the festal hall structure with its porch, and beside this and detached, except for its connection by an arched passage, the two-story palace chapel of S. Ulrich in the form of a cross-shaped central plan. In its vicinity were discovered the foundation walls of a house divided into small rooms, so that we may place there the location of the monarch's dwelling, just as in Bankwarderode. A building adjoining on the other side, which with the use of the ancient enclosing

walls, has been recently erected for living purposes, dates only from the latest middle ages, and is useless for the knowledge of the ancient imperial palace. The hall building most concerns us (see the adjacent Plate ⁵²), a rectangle of about 154.2×49.2 ft. internal width.

Note 52. From Kunstdenkmäler der Provinz Hannover. II. Reg. Bez. Hildesheim. 1, 2. Stadt Goslar, p. 13 et seq. Hanover. 1901.

It contains two great halls, one over the other, of which the lower is divided into seven narrow rooms by transverse pointed tunnel vaults, that were added in the Gothic period. Small windows are enclosed in the before mentioned trefoil recesses and sparingly introduce light. The upper story better permits the recognition of the original condition. It appears as a vast hall in two aisles, whose ceiling is interrupted at the middle of its length by a raised portion of the room like a transverse aisle. To this cross aisle, at the rear end of which was doubtless the imperial seat of honor, corresponds in the elevation of the front side a great round-arched opening of more than 19.7 ft. width with a roof gable above it. Now in a free modern extension is it imitated from one in the internal system of the Minster at Aix-la-Chapelle, filled by a two-story arcade, and it has no practical importance. The entire plan of the hall with its expressed transverse division permits the conjecture, that here was the ancient ascent to the emperor's throne by a flight of steps, and one may then indeed conceive the entire opening as undivided and a great plain entrance doorway of the imperial residence. On the right and left of this middle portion three triple openings with columns furnish the hall with light and air, and since by their entire form they admit of no closure, they thereby preserve the impression of an open hall, in which the imperial judgment seat was as open as possible, and stood beneath the open sky as nearly as possible. The beam ceiling of the interior is supported by wooden posts of the Gothic period; but to the ancient nucleus of the structure belongs the wall piers of the middle hall, that are decorated by late Romanesque foliage and knob capitals (See Fig. 392 in Chapter 8). On the northern end is attached to this hall building a narrow addition and portico

in two stories; in the lower story it forms a passage to the rear of the palace, and in the upper story is an anteroom to the great hall. It is furnished with an ornamental porch decorated by columns of late Romanesque forms, and to this leads a flight of steps from each side.⁵³

Note 53. From Denkmäler der Baukunst, published by students of the Technische Hochschule in Berlin.

64. Palace of the Wartburg.

In such a widely extended plan, as the Castle Dankwarderode exhibits for the actual living rooms, and as we must conceive it as well for the imperial Palace in Goslar, may be reflected the custom of dwelling at the ancient court with its scattered separate buildings. From our views the comfort of living is strongly reduced by such a dispersion of the rooms, and it appears that already in the 12 th and 13 th centuries the feeling for a more habitable connection of the separate living rooms made itself felt. It must then lead to arranging the 1 living rooms closer together, and thus was so attained in a series of expensive buildings, that they were grouped with the hall structure under one roof.

The transition from the originally plain two-story hall design to the compound residence building is shown to us in the clearest manner by the Palace of the Wartburg, the beautifully located seat of the Thuringian landgraves, which by historical reminiscences as well as by tale and poetry is equally wrapt in a glorifying glimmer, and is known and wondered at like no other by the German people. (Figs. 56, 58⁵⁴, 55). Here had the landgrave Louis III built a palace about the middle of the 12 th century, and the two lower stories are generally regarded as that structure. Landgrave Herrmann I (1190 - 1217), the patron of poets, must have raised the hall building about one story higher for the increased needs of the time. In the middle of the 19 th century the castle was restored, and thus also the palace in accordance with the requirements of modern courts was partially changed. Thus it is difficult to decide, whether the mode of origin mentioned above is applicable, or nothing more than merely the addition of the third story first dates from the work of Herrmann I. In any case, we must assume,

that in the two-story building below the spiral staircase
 (which was built in the 18th century) and the
 building is the result of the 18th century. The building is
 as well as from its location in the midst of smaller
 buildings, which are built in the 18th century.
 hall. So we are inclined at least to attribute the existing
 internal subdivision (Fig. 57) of the second story to a later
 architectural activity. This certainly is true of the inser-
 tion of the chapel, since this does not harmonize with the dis-
 tribution of the windows on the court front.

Note 54. From Ritzgen, R. *Wagner und der Norden*. -- This
 is certainly the modern ground plan. It is doubtful, whether
 all was so originally, aside from these parts, which in the
 interest of appropriate use could not be restored in the origi-
 nal way. We cannot investigate today, whether any vestiges of
 existed, even from a later time, that might indicate window
 closures. We do not believe in such, not even in the half of
 Hermann I. Likewise doubtful are the now existing fireplaces.
 Note 55. After a lithographic copy of the drawing, that was
 made for the purpose of the restoration, is the drawing of the
 architectural student at the Technische Hochschule, a native
 of Witten, gave such lithographs to his fellow students.
 In its present condition the palace of the Wittenberg residen-
 ce is a substantially three-story structure of about 182.8 x 50.9
 m., whose three stories are architecturally treated nearly a
 similar.

The lower story is accessible from the castle court through
 the main entrance on the south side, and is connected
 with the upper story by a staircase. The middle story
 one of these appears to have served as a kitchen, and it was
 connected with the middle hall of the second story by a small
 stairway in the wall; the two others may have been intended
 for the same purpose. The main entrance is on the south side
 from the court in open front of stairs. By this one passed
 to a splendid arcade opening outward, and which was separated
 by a wall from the lower hall. The main entrance is on the
 south side, and the main entrance is on the south side.

that in the two-story building Louis the Springer originally found the upper story as a great single hall, since the hall now found in the middle of that story, both from its small dimensions, as well as from its location in the midst of smaller living rooms, scarcely appears suited for use as a half open hall. So we are inclined at least to attribute the existing internal subdivision (Fig. 57) of the second story to a later architectural activity. This certainly is true of the insertion of the chapel, since this does not harmonize with the distribution of the windows on the court front.

Note 54. From Ritgen, H. Führer auf der Wartburg. -- This is certainly the modern ground plan. It is doubtful, whether all was so originally, aside from these parts, which in the interest of appropriate use could not be restored in the ancient way. We cannot investigate today, whether any vestiges existed, even from a later time, that might indicate window closures. We do not believe in such, not even in the hall of Hermann I. Likewise doubtful are the now existing fireplaces.

Note 55. After a lithographic copy of the drawing, that was made for the purpose of the restoration. In the year 1850 an architectural student at the Karlsruhe Polytechnicum, a native of Weimar, gave such lithographs to his fellow students.

In its present condition the Palace of the Wartburg represents a substantially three-story structure of about 129.6×50.9 ft., whose three stories are architecturally treated nearly similar.

The lower story is accessible from the castle court through the extreme left archway on the ground level, and it contains three vaulted rooms arranged along a corridor. The middle one of these appears to have served as a kitchen, and it was connected with the middle hall of the second story by a small stairway in the wall; the two others may have been intended for living rooms for the retainers. To the second story leads from the court an open flight of stairs. By this one passed into a passage extending the entire length of the building with a splendid arcade opening outward, and which was separated by a solid wall from the imperial living rooms, and besides there was connected with the adjacent building with fireplace. (Keminat). On it lie two square rooms furnished with middle

...one of which was later vaulted and indeed in the
...the third story a narrow corridor extends laterwise, wi-
...toward the festival hall, likewise ex-
...the entire length, it has numerous groups of windows,
...so that during feasts and solemn affairs, it represented an
...it will still retain its character, and this
...wall with a series of windows, and this
...or of the castle, and it may be doubtful whether this was the
...case originally, or rather whether only single windows penet-
...rated the outer wall. Such a hall freely open to the air on
...two sides may be exposed to noxious requirements for comfort,
...probably had no kind of closure. For the ancient time, such
...the open sky, to warm by a simple camp fire on benches and on a
...cameraria in war, such a design is no longer surprising; its
...the hall was accessible in ancient times is now no longer vis-
...ible; it is now reached only from the adjacent and entirely
...renovated room (Kehlbau).

65. Imperial Palace at Gelnhausen.

A similar design in several stories is to be seen in the tw-
...year 1180, but in so far on a different plan, since at the en-
...trance of the irregular egg-shaped court of the castle the way
...and room was transferred over the gateway passage, while just
...an outer angle. For the castle chapel, as which men would
...in made probable by the finding of the foundations of a centr-
...al building in the depth of the court at the side turned from
...the entrance gate. The view of the castle east is given in

supports, one of which was later vaulted and indeed in the year 1819 was arranged as a chapel. Between the two is found a hall with two supporting columns, adjoining which on the left is an elevated niche, the "bridge" or seat of the Landgrave. Besides this there remain two smaller rooms, one of which affords a passage to the room lying at the left, while in the other terminates the before mentioned stairway from the Kitchen.

In the third story a narrow corridor extends lengthwise, with open arcade windows. Toward the festal hall, likewise extending the entire length, it has numerous groups of windows, so that during feasts and solemn affairs, it represented an extension of the hall well suited for spectators. Now this hall opens with a similar series of windows toward the exterior of the castle, and it may be doubtful whether this was the case originally, or rather whether only single windows penetrated the outer wall. Such a hall freely open to the air on two sides may be opposed to modern requirements for comfort, especially if one takes into consideration, that these openings probably had no kind of closure. For the ancient time, accustomed to hold public sittings of courts and assemblies under the open sky, to warm by a simple camp fire on hunts and on campaigns in war, such a design is no longer surprising; its like is found elsewhere, as for example in Dankwarderode. How the hall was accessible in ancient times is now no longer visible; it is now reached only from the adjacent and entirely rebuilt warmed room (keminat).

65. Imperial Palace at Gelnhausen.

A similar design in several stories is to be seen in the ruins of the emperor's Castle of Gelnhausen.⁵⁶ This was also a castle surrounded by water like Dankwarderode, built about the year 1180, but in so far on a different plan, since at the entrance of the irregular egg-shaped court of the castle the warmed room was transferred over the gateway passage, while just at the left of those entering, the palace building adjoined at an obtuse angle. For the castle chapel, as which men would describe the vaulted room over the gateway, another location is made probable by the finding of the foundations of a central building in the depth of the court at the side turned from the entrance gate. The view of the palace that is given in

the plan of the palace is shown in the sketch on the opposite page.

Sketch of the plan of the palace.

The plan of the palace is shown in the sketch on the opposite page. The plan is a rectangular one, with a central courtyard. The palace is divided into several rooms, and the central courtyard is surrounded by a wall. The plan is shown in the sketch on the opposite page.

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Fig. 59 is according to the drawings and the attempt at its restoration by Gladbach.

Note 56. See Moller, G. Denkmäler des deutschen Baukunst. Continued by E. Gladbach. Vol. 3. Darmstadt. 1851. -- Critically and in many details severely treated by L. Bickell are the construction and the general plan of the castle. (In Die Bau- und Kunstdenkmäler des Reg. Bez. Cassel. Vol. 1. Kreis Gelnhausen. Marburg. 1901.).

Here the lower story has become entirely like a cellar with solid walls and small openings for light. It is divided internally by transverse and longitudinal walls, so that a passage of about 10.5 ft. wide extends along the middle portion of the front side, behind which are separated three rooms, a larger one on the East and two smaller ones. It is further certain, that two stories rose above them, from the circumstance, that the vertical bands of the second story, remaining for the entire length of the front, are continued upward unchanged, and there may be assumed for the upper story the same arrangement of windows as now remaining below it. Also in place of the freely restored balcony over the entrance doorway, as a design not assured in the traditions of the Italian middle ages, rather assume a similar triple group of windows, which might well find room in the existing wall space.

To the yet existing second story rose a flight of steps, now destroyed. Thus the beautiful doorway was spanned by a trefoil arch (Fig. 276), and one passed into a hall about 40.7 × 45.9 ft. with 4 columns supporting its ceiling, in which a beautiful fireplace remains at the rear wall (Plate adjoining p. 363). On the left adjoining the court was a passage of considerable width, lighted by the two groups of windows in Fig. 59, and on this lay two small rooms next the exterior of the house. Another room of irregular shape then lay in the angle between the palace and the gateway building. The whole is further connected by a stairway with the already mentioned vaulted room over the entrance, so that we here already find fine and respectable apartments closely arranged together. The same and rather narrow stairway also represents the connection with the upper main hall of the palace, at least no vestiges of an ext-

external ascent to this are to be seen.

The dimensions of the upper hall amount to about 88.6 and 40.7 ft., thus being less than those of Dankwarderode and of the Wartburg. This may be surprising in contrast with the grand plan at Goslar, but finds its explanation also on the one hand, that the imperial court in respect to the developed subdivision among local rulers, no longer required such extensive halls, since even broad provinces of people were represented by single powerful rulers; then also in that such a later "imperial palace" was perhaps not so much intended for the needs of the imperial court itself as for those of a high official, who like a governor represented the emperor in his official province. It was scarcely possible for the emperor to remain permanently anywhere outside the country of his family. The immense difficulties, which the increased power of the princes prepared for the empire, caused that sometimes here and sometimes there disorders, strife and revolts arose. And as with the existing conditions of intercourse and of news service to conduct important state affairs at a distance, there remained nothing else, than to go to the locality of the most important occurrences, in order to restrain resistance by a strong hand. But remaining there was not for long; the same necessity soon called again to a different place. Thus so many of the "imperial palaces" bear this name only with right, because they were imperial possessions and were indeed occasionally used as stopping places, and with these also belongs Gelnhausen. The tales that the emperor himself staid there are now numerous. Barbarossa, whose name the castle bears with the people, probably never lived until its completion.

66. Imperial Palace at Eger.

For similar requirements in rooms is also calculated the Castle in Eger.⁵⁷ There a splendidly treated castle also lies detached in the court, and the Romanesque hall building is brought into closer connection with the living rooms, even more intimately than in Gelnhausen. Judging from the arrangement of the windows, the palace contained a hall about 82.0 × 34.5 ft. in dimensions, which opened externally with 3 groups of windows, and as in the last example, was accessible by a flight of

steps. At the left adjoined three rooms, one small and

one large, and at the right a small room and a

small room. The

Palace at Wittenberg.

One of the most interesting features of the

palace is the very instructive palace on the hill of Wittenberg, 50 in

the center. The Count von Arnim built it for himself ab-

out the year 1800, after he had given up his family castle for

the founding of a Protestant monastery, and had transferred

his seat to Wittenberg. On account of its valuable details,

we represent it at a larger scale on the two adjacent plates.

It is a small building with a flat roof, and

built in two stories above a substructure like a cellar, and

inserted in the enclosing walls of the castle. The defensive

belly before it forms an addition of the later middle ages.

The interior was divided by a row of detached supports, that

of the first of the adjacent plates. In the interior is en-

ded on graceful small columns a great fireplace; the recesses

of the windows and the door are on the same level as the

of the windows and the door are on the same level as the

of the windows and the door are on the same level as the

of the windows and the door are on the same level as the

steps. At the left adjoined then three rooms, one small and two large, one of these being regarded as a kitchen.

Note 57. See Simon, K. Studien zum romantischen Wohnhaus in Deutschland. Strassburg. 1892. -- Also Denkmäler der Baukunst. Abt. 1. Lief. 26. Pl. 10.

67. Palace at Münzenberg.

That at this time even lower rulers than the emperor erected buildings for splendid knightly courts, and which scarcely were inferior to the Gelnhausen hall building, is shown to us by the very instructive palace on the hill of Münzenberg,⁵⁸ in the Wetterau. The Count von Arnsburg built it for himself about the year 1200, after he had given up his family castle for the founding of a Cistercian Monastery, and had transferred his seat to Münzenberg. On account of its valuable details, we represent it at a larger scale on the two adjacent Plates.

Note 58. Möller, G. Denkmäler der deutschen Baukunst. Continued by E. Gladbach. Vol. 7. pl. 25 to 33. p. 57. Darmstadt. 1851. -- Also in Denkmäler der Baukunst. Abt. 1. Lief. 26.

It is a hall building about 42.7 ft. long by 26.3 ft. wide, built in two stories above a substructure like a cellar, and inserted in the enclosing walls of the castle. The defensive gallery before it forms an addition of the later middle ages. The interior was divided by a row of detached supports, that supported the ceiling by means of a heavy girder; yet no remains of that exist. The lower hall was reached by an external flight of steps at the northern wall, whose traces are visible on the first of the adjacent Plates. In the interior is arranged on graceful small columns a great fireplace; the recesses of the windows next the court are so arranged as to afford seat benches at the same time; they are covered horizontally above by a wooden lintel, and are so fixed, that they may be closed by wooden shutters close behind the columns. Thus the hall was entirely closed against access of external air, and when a great fire blazed in the fireplace, it afforded a comfortable interior, even in winter. The windows of the upper hall directly above were entirely open, on the contrary. Their treatment internally and externally nowhere shows a place at which a shutter could be placed. Also the opposite row of win-

... as to afford a convenient seat with a cushion; but its width ...
 ... Thus we assume, that likewise this palace in ...
 ... admission to the sun and wind, in harmony with the ancient ...
 ... perhaps in case of siege, these great openings might be closed ...
 ... For the high location of the palace ...
 ... also offered good protection against storming, yet shots entering from a distance might easily prevent the use of the hall. ...
 ... This upper hall again had its chief access from externally; the doorway is originally preserved at the northwest angle of ...
 ... that we may conceive were constructed of wood, although ...
 ... wooden stairway in connection with such monumental stone ...
 ... at the window and doorway recessed of our building, men even ...
 ... then thought differently from today in regard to the usual ...
 ... could proceed far more carefully in the selection of materials ...
 ... existing in abundance, then it is possible for us to do now. ...
 ... It is not impossible, that in the opposite southeast angle a ...
 ... stairway connection led from the cellar to the upper story. The ...
 ... circumstance, that the floor bears there exhibits a wider ...
 ... and the striking arrangement of the double window in the ...

88. Palace Buildings in France; Genoa.

... but there were yet times of animated intellectual movement ...
 ... in which Germany with comparatively united powers might ...
 ... bear as the leading power of the West. Evidence of this ...
 ... the rich series of charming Renaissance palace structures, ob-

windows offers no place for a handy closure. It indeed lies in a recess 3.28 ft. deep, that is again raised by a bench, so as to afford a convenient seat with a cushion; but its width of over 26.3 ft. is too great, for one to think of adding hinged shutters. Thus we assume, that likewise this palace in ordinary times stood entirely open on both sides, affording admission to the sun and wind, in harmony with the ancient festival days beneath the open sky. This does not prevent, that perhaps in case of siege, these great openings might be closed by wooden planks, which might be supported against the beam lintels of the recesses. For the high location of the palace also offered good protection against storming, yet shots entering from a distance might easily prevent the use of the hall. This upper hall again had its chief access from externally; the doorway is partially preserved at the northwest angle of the hall; it must have been accessible by a high flight of steps, that we may conceive were constructed of wood, although our present designing might regard as little suitable such a wooden stairway in connection with such monumental stone construction. As also shown by the not very thick wooden ceilings at the window and doorway recessed of our building, men even then thought differently from today in regard to the equal authorization of wooden and of stone construction, since they could proceed far more carefully in the selection of materials existing in abundance, than it is possible for us to do now. It is not impossible, that in the opposite southeast angle a stairway connection led from the cellar to the upper story. The circumstance, that the floor beams there exhibit a wider spacing and the striking arrangement of the double window in the court wall may indicate this.

68. Palace Buildings in France; Sens.

The period of the old German empire was not always entirely magnificent; hot contests internally as well as externally greatly restricted the progress of architectural civilization; but there were yet times of animated intellectual movement, times in which Germany with comparatively united powers must appear as the leading power of the West. Evidence of this is the rich series of charming Romanesque palace structures, cho-

chosen by us through a selection of examples, such as in a similar manner no other land has produced. But since with the beginning of the 13th century, the mediaeval idea of the German-Roman empire finally and internally broke down (its preservation through further centuries was based rather on courtly-diplomatic assumptions than upon actual conditions), then the leadership in palace architecture passed over to the meanwhile artistically and politically strengthened France. From the best period of the early French Gothic style we possess a great number of costly hall structures, which give us an imposing impression of proud wealth and of the taste of French great men. Famous is the splendid hall, still with defiant battlements and defensive angle towers, that the Bishop of Sens built about 1240, and which we reproduce in Fig. 60⁵⁹ from Viollet-le-Duc as one of the simplest.

Note 59. See Viollet-le-Duc, E. Dict. Rais. de l'Architecture etc. Vol. 8. p. 75 et seq. Paris. 1875.

It is of moderate size (86.0 × 125.0 ft. in round numbers), and in the upper story is covered by a series of splendidly turned cross vaults. The lower hall and also the cellar story are each in two aisles, both being monumentally vaulted on beautiful columns. Both, or at least the ground story, played in the household of the Bishop a certain role as reception or living rooms. An internal stairway rose free in the interior and formed the connection between the second and third stories, and a vast fireplace provided for the comfort of the great room, perhaps insufficiently according to our ideas. Yet in an important advance from the heretofore considered German examples, all windows were arranged for glazing. The whole thus affords incomparably better protection against the weather, and the hall thus first changes from an interior intended substantially for public assemblies to an actual living apartment.

It is one peculiarity of the French civic architecture, that in comparison to German conditions, it combined its means in a smaller number of larger designs, while the lower nobility there already early preferred to serve at the court of a great noble, than to remain at a monotonous knight's seat in forest and mountain among the peasants. This had as a result, that

also the hall buildings of the French castles received very important dimensions, and so examples thereof have come to us in Coucy, Pierrefonds, Montargis etc., of particular grandeur. They regularly lie, like the Romanesque hall buildings of Germany, in the external wall of the castle, there bearing beneath the margin of the roof the continuous defensive gallery, but which is not necessarily connected with the interior of the hall (see the Castle of the Order at Riga in Art. 41, Plate next page 41), and their rich window groups are turned toward the castle court. There were always preferred plans with a single aisle, that for widths of 32.8 to 52.5 ft., men preferred to cover with wooden tunnel vaults extending high into the framework of the roof.⁶⁰ An exception is formed by the hall of the royal Castle in Paris, erected by Philip the Fair, which with its dimensions of nearly 91.9 × 229.7 ft. represents the greatest of such undertakings of the middle ages, and strikingly expresses the supremacy of the royal power over the great vassals. This hall was arranged in two aisles, carried to a great height, and it was covered by two wooden tunnel vaults of the kind previously mentioned. As an actual doubling of one of the usual castle halls, it stood over a vaulted lower story in four aisles, and also of very respectable height. Its basal form has been retained in the present promenade hall (hall of lost steps) of the Paris Palace of Justice, in consequence of the renewed use of the ancient foundations.

Note 60. A number of examples, whose execution in detail must be omitted here for lack of space, are given by Viollet-le-Duc. Vol. 8..p. 78 et seq..

69. Hall of the Knights at the Hague.

The influence of these grand buildings of France on neighboring countries could not fail. The vast and lofty effect of the halls was especially transferred to the buildings of the Norman-English nobles, which we shall have to describe later. Then indeed a certain change in form appeared, when the ceiling of the hall on English soil soon dropped the form of the wooden tunnel vault, and in connection with the English-Norwegian circle of civilization passed over to the development of open and visible forms of the framework of the roof. The last German hall building, which the ideas of the mediaeval empire yet

brought forth on Dutch soil, exhibits the influence of both by its vicinity and animated commercial relations with influential countries, and it may therefore be regarded as an indeed very independent transference of the courtly and refined forms there developed, to the still ever rather somewhat more primitive conditions of the coast of the North Sea. The Hall of the Knights in the Binnenhof at the Hague, the ancient "Castle of Hague" of the count of Holland, was begun by William II, the anti-king of Conrad von Hohenstaufen, about the year 1250 as a true imperial hall, but indeed, since he soon afterwards died, it was first completed about 20 years later by his son Floris V. (Figs. 60 to 65 ⁶¹). It is a vast hall structure, that stands free on three sides and occupies the middle of the castle court, being internally almost 59.1 ft. wide and 124.7 ft. long.

Note 61. From Mühlke, K. Streifzüge in Altholländische Denkmalspflege. 1904. p. 109 et seq. -- Also reprinted in Mühlke, K. Von nordischen Volkskunst. Berlin. 1906.

It rises above a low vaulted lower story and is externally very imposingly treated with a proud gable, buttresses and angle turrets, and also was adorned in later times by animated and graceful late gothic tracery. The flight of steps forming the access, differing from the previously considered buildings, lies at the free gable end of the structure. The interior is of unusual grandeur. Even visible trusses of great oaken timbers dressed square span the hall, free from intermediate supports, so that the eye reaches to the ridge of the open roof nearly 85.3 ft. high. The trusses are set very far apart and rest on stone half columns; they are connected by purlins strengthened by braces, and by these support the entirely visible rafters of the roof. Widely spaced windows in the roof introduce some light into this upper portion of the vast interior. A great double fireplace on the eastern side of the hall served for heating; in addition must we think of the walls as decorated by rich hangings of rugs and costly fabrics, at least on festal occasions. The most effective ornamentation of such a hall indeed would always be the movement of a body of knights, gayly colored and gleaming with weapons and metal ornaments;

that gathered here about their feudal lord, whether for joyful feasts, for judgment or for state affairs.

The older group of rooms, found on the east and separated by a narrow court, did not properly belong to this "imperial hall". They consist of the ground story of a small earlier castle as well as of a nearly square hall, and form the only existing remains of the living rooms of the Count.

70. Hall of the Knights at Marburg.

In a different and likewise very notable way is the influence of French hall buildings expressed in the beautiful Hall of the Knights of the Castle at Marburg. (See Fig. 66⁶³ and Plate next p. 80⁶²), which Landgrave Henry I erected anew at the enlargement of the previously merely unimportant castle about the year 1288. It is indeed the first larger hall building in Germany, that adopted the closing of the interior by glazing from the French prototypes. Yet its plan is formed after German views in a very independent way, when it also adopts the division in two aisles for the upper hall, and avoiding the great development in height of French halls, covers it by ten cross vaults resting on stumpy octagonal piers. The detail forms of the building are severe and dry, but are developed with great care. particularly the great windows of the hall are treated with extreme consistence in their chamfered plate tracery, also in their lower portions being separated by a stone transom, are already arranged for the reception of movable wooden shutters. (See the corresponding representation in Fig. 315). Toward the narrow court this hall building is without decoration, in strong contrast to the French and earlier German customs; on the other hand the external side, that looks out far over the surrounding valleys, is subdivided by bold buttresses, angle turrets and a central projecting bay, severely, but very boldly and effectively. The access to the hall now leads over a winding stairway through the adjacent building. Yet it is assumed, that one formerly passed over a bridge near the doorway B into the interior. But it is perhaps more probable, that to this doorway led, not a bridge, but a flight of steps, just as in Münzenberg.

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published by the Society for Hessian History and Knowledge of the Country. Lief. 1. Die Schlosskapelle und der Rittersaal zu Marburg. Prepared by H. von Dehn-Rotfelsen. p. 2. Cassel. 1862.

Note 63. For the execution of our illustration was utilized Kallenbach's *Atlas zur Geschichte der deutschen mittelalterliche Baukunst*. Pl. 33. Munich. 1847.

71. The "Gras" at Aix-la-Chapelle.

To what small dimensions man occasionally descended in such hall buildings, the so-called "Gras" in Aix-la-Chapelle presents an example, that we place here on account of its date. It is a rectangular structure enclosed by the houses of citizens, that contains a hall story above a closed lower story (Fig. 67⁶⁴) -- the passage to the adjacent opening did not originally exist.

Note 64. *Frog Bock, F. Rheinlands Baudenkmale des Mittelalters*. Vol. 2. Cologne and Neuss. 1870-1874.

Along the great group of windows of the facade, whose form in details is indeed based on modern conjecture, extends a narrow passage, called the gallery; behind it was later the judgment hall. On the exterior the great height of the building was utilized for the purpose of arranging above the windows of the gallery, a series of niches with the statues of the seven electoral princes as the finest ornamentation.

The original purpose of the building is hard to determine with certainty; from an inscription partly remaining only so much is derived, that under the government of King Richard von Cornwallis (1257 - 1272), it was built by a master Heinrich. The decoration by the statues of the seven electors certainly indicates an imperial structure; likewise the form of the upper story with the preceding narrow passage recalls so strongly the prototypes of the Palaces in Gelnhausen and the Wartburg, that we must accept the usual designation of the building as the palace or judgment hall of Richard von Cornwallis as sufficient. And indeed so much the more, since the building substantially differs from the designs of the oldest city halls, in whose number men have also desired to enroll it. That the hall has become so unimportant in comparison with the earlier palaces of the German emperors may easily be explained

by the much less powers, that the shadow of the kingdom of Richard only obtained, compared with theirs, or on the grounds mentioned in Art. 74.

72. Hall Building at Vayda-Hunyad.

How essentially different appeared such a hall building 100 years later at the end of the 14th century in a small castle is shown by Castle Vayda-Hunyad, which was illustrated in the preceding Heft of this "Handbook." The ground plan given there⁶⁶ allows the recognition of the hall building on the western side, placed in the defensive line and south of the entrance tower, as an important part of the entire castle. The view likewise permits it to appear especially important. As everywhere, th there are here two halls over each other, and we illustrate in Fig. 69⁶⁵ the upper one, the lower one being indicated by the general ground plan of the castle.

Note 65. From the drawings in Wiener Bauhütte.

Note 66. See the first edition. Fig. 79.

The flight of steps is here entirely omitted; a winding stairway leads upward, as such are arranged in the castles at Coucy and Pierrefonds. Just as there is the hall building connected with the adjoining defensive towers, here with the entrance tower at the north and a round tower at the south. Along the western wall extends a passage, that has a two-fold purpose. First as a defensive gallery it contributed to the defense of the castle, particularly in aiding in the defense of the bridge, that led to the entrance tower. A great number of archers could shoot from the bays toward the bridge, and from the windows of the passage could be controlled the opposite bank of the little river and the plain, wherever the enemy might extend. This passage with its charming architecture certainly did not possess the character of military architecture. On the general view of the castle, which we give in Fig. 68⁶⁵, it forms with its gay gracefulness a strong contrast to the warlike severity of the remainder of the castle. Above the buttresses, that are attached to the lower part of the wall to support them, rise the bay windows, between them being the gallery on consoles and with rich window architecture, well adapted for an airy and beautiful retreat. And when great feasts were held

in the hall, if men sat at the drinking bouts, then could the servants pass outside in the gallery.

82
83 The hall itself, like that at Marburg, is vaulted in two aisles on a row of columns. The architectural development is simple but elegant. In this manner during the 14th and 15th centuries was erected a series of hall buildings. The vaulting was in nowise absolutely retained; on the contrary, many of these hall buildings bore wooden ceilings.

73. Castle at Büdingen.

In the preceding we see the hall structures regularly occur as a comparatively independent part of the prince's court or castle, so that it was erected detached by itself, or on a narrow space, at least left free from other rooms on both the longer sides. We see in this an echo of the incient isolated German chieftain's hall, and it is characteristic, that its influence should be strongly manifest for so long a time. How strenuously men held fast to this relatively simple ground plan is shown by examples, in which this form could only be wrung from the limited building site by a certain force. The Castle at Büdingen (Fig. 70 ⁶⁷) as a true valley and water castle lies between two branches of the Seemenbach northwest of Gelnhausen. The very old, but in later times much rebuilt and changed plan encloses an irregular roundish court; its enclosing walls to the height of 13.1 to 19.7 ft. still belong to the R. Romanesque style, and consist of ashlar with boldly projecting faces, as for the neighboring castles at Gelnhausen and Münzenberg.

Note 67. See *Kunstdenkmäler in Grossherzogtum Hessen. Province Oberhessen. Kreis Büdingen.* p. 49 et seq. Darmstadt. 1890.

The two-aisled vaulted main hall of the castle, designated by 16 in our illustration, was probably erected with the living rooms 17 and 20 in the year 1740 to replace an earlier and also Romanesque hall structure, that rose on the areas of rooms 10 to 12, and of which the gable walls with notable late Romanesque architectural forms are still preserved. Both palaces have in common, that a hall of sufficient height could not be arranged in straight form within them. In a very naive way, yet the custom of including such rooms in the single line of

of the walls enclosing the castle were not so high, and
 forming a sort of wall, very strongly covered to the top
 with a sort of masonry or rubble. The walls of the castle
 area has been covered by plain cross vaults on a row of stone
 piers, and at the termination of the wall at all, and
 in these vaults the masonry of the walls of the

Graceful vaulted bay of a window recess.

74. English Castle: Tower of London.

The tower is situated on the highest part of the
 continent and occupies the castle, and about the same time
 the construction of the tower was completed as a single wall. The
 central part was formed by the stone vaults of the tower (tower)
 and the (tower), a central stone vault in the tower, and
 the vaulting in the of vaulting of the tower was the last part
 of the building, but was probably carried into the tower
 great vaults of the last of the tower. The vaulting of
 the vaulting was about 10 ft. in space in the tower, but
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 (the tower), the vaulting of the tower in the tower, vaulting
 by vaulting and vaulting, that the tower in the tower, vaulting
 immediately after the conquest of the country.

Note 68. See Ruthenian. See English Castle. Vol. 1. p. 15

See Ruthenian. 1944.

Note 69. See the same. p. 15.

The tower is situated on the highest part of the
 continent and occupies the castle, and about the same time
 the construction of the tower was completed as a single wall. The
 central part was formed by the stone vaults of the tower (tower)
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 that the tower with stone vault, that the tower of "tower"
 the tower to be carried into the tower and stone, as in
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of the walls enclosing the castle could not be dropped, thus producing a bent form of hall, very strongly opposed to our modern views on monumental architecture. But still this ground area has been covered by plain cross vaults on a row of stone piers, just as if its irregularities did not exist at all, also then enhancing the picturesque charm of the whole by the graceful vaulted bay of a window recess.

74. English Castles; Tower of London.

Thoroughly different from the important residences of the continent are arranged the castles, that about the same time the conquering Norman people erected on English soil.⁶⁸ Their chief part was formed by the strong residence tower (termed keep in English), a custom already impressed in Normandy, which originally in time of rebellion or feud was the last refuge of the besieged, but then gradually changed into the permanent residence of the lord of the castle. The simplest of such dwellings has about 19.7 ft. square in the interior; but frequently under the great requirements the dimensions often increase to great magnitude. Practically if the necessary rooms were to be provided for an important or even a royal court, there rise such mighty stone giants, that the name of "tower" may scarcely be applied to the defiant mass of stone. As an example of such structures may be mentioned here first in plan (Fig. 71⁶⁹), the building of the Tower in London, enveloped by poetry and tradition, that Duke William erected for himself immediately after the conquest of the country.

Note 68. See Muthesius. Das Englische Haus. Vol. 1. p. 15 et seq. Berlin. 1904.

Note 69. See the same. p. 19.

The ground plan comprises a rectangle of about 114.8×98.4 ft., and in the existing four stories is similarly divided into three rooms. For the defense of the building it is characteristic, that the living rooms are surrounded by a narrow gallery intended for defense, and are thereby protected from hostile shots. These are all rooms of imposing dimensions, among them being the important chapel extending through three stories. The main hall with dimensions of 39.4×95.2 ft. in the third story certainly served as a festal hall; above it are f

found the living and sleeping rooms of the king; in the second story beneath was the great entrance hall of the castle. Wind-ing stairways of moderate dimensions are arranged in the three corner towers and connect together the different stories.

85— Thus a building here appears, that might also serve as a prison in newly subjugated and severely oppressed lands, just as it was adapted to develop into broad halls a magnificent knightly and court life. At least was perhaps care taken therein for comfortable living in the closer family circle. Meanwhile is this rather the peculiarity of this single example; other buildings of the same kind were also intended more for the housing side of living. Thus Castle Rising in Norfolk ⁷⁰ at first contained the same three rooms; chapel, large and small halls, indeed in substantially smaller dimensions than the royal castle of the Tower, but also with an entire number of rooms and chambers, in which a more comfortable living might occur.

Note 70. See the same work. p. 17.

These vast residence castles with their well developed forms of living are likewise the expression of the strong consciousness of power of the Norman nobility, and of its proud contrast to the subjugated people, as much as for its superior civilization. With the increasing mixture of both races, as this set in under the rule of King John Lackland and by the permission of Magna Charta in 1215, there vanished the necessity for the important men to enclose themselves in such prison-like masses of stone. Men began to spread more freely, and similarly to the plans on the continent, to group the separate rooms around an internal court beneath the protection of towers and other fortifications. It corresponds entirely to the extremely conservative sense of the English nature, that with this and until in later times, men adhered more than on the continent to the original custom and to the arrangement of the ancient hall, without detriment to the additions, which resulted from the increased requirements of living.

75. Penshurst Place.

As an example belonging to about the year 1350 may be mentioned here the hall of the Castle of Penshurst Place in Kent.

(Figs. 72, 73 ⁷¹). As the building of the owner of land and not of princely rank, it has the small dimensions of 78.7 x 39.4 ft., and it is valuable on account of the complete preservation of its ancient arrangement.

Note 71. See the same work. p. 28.

We see how at one end rises the elevated seat of the master; on the middle line of the room and not far from this place of honor is an octagonal enclosed space in the floor, that in the most primitive manner served as a hearth, in order to distribute in the room both light and heat from the burning of the wood laid thereon; ⁷² along the longer sides extend tables and benches to receive the dependents; in brief and actually nothing is changed from the arrangement of the hall as described in the ancient hero books. Only one innovation has occurred. Opposite the seat of the master was erected a gallery for the players, so that beneath it a partition of rich paneling cuts off a small vestibule. Also elsewhere the form treatment of the details exhibits wealth and refined culture. Men had long been accustomed to glaze windows, even if at first this luxury was limited to merely the upper portion, or the glazing was so fixed in special frames, that on account of its cost it could be removed in the absence of the noble family. Here in our example the windows are large, ornamented by rich tracery in cut stone with fixed glazing. The ceiling of the hall is formed by an artistic wooden framework, that freely spans the entire width without a tie-beam. At its centre is found an opening for escape of smoke, over which men liked to place a roof turret to keep out rain as well as for a better architectural solution.

Note 72. According to Kuthenius, this mode of heating for halls continued for centuries, when already all other rooms were furnished with fireplaces at the side. In the Colleges of the Universities of Oxford and Cambridge it was to be found until in the 19th century.

This conception of the wooden ceiling, English architecture long utilized as one of its favorite ideas, and it led to the greatest undertakings. As to a climax may reference be made here to the magnificent ceiling of the vast Westminster Hall.

It represents in its way a high attainment of mediaeval architecture, since in general this entire hall, rebuilt from 1377 to 1390 by Richard III in its existing form, may be considered as the grandest and most notable historical example, that proceeded from the mediaeval development of the ancient German chieftain's hall.

76. Importance of the Hall in later Times.

Such great halls then served in later times and on the estates of the less prominent men as the centres of the entire life and affairs. There were not only feasts held, but also the more important affairs were transacted. Particularly if the hall were arranged on the level of the ground, it developed into a common reception hall, in which the daily assemblage of even a lesser sort, the agricultural affairs, and the business transactions connected therewith found their place. There mingled then in such halls the purpose of an imposing festal hall, the chieftain's hall in the ancient sense, with that of the archaic hut or of a single room, in which all activities of public life occurred together and successively. In this less festal conception then rooms of hall form are elements of so many important plans of residences of the later time, without possessing in themselves the entirely exceptional importance, that particularly characterized the earlier of the plans previously described. Before all for these halls were devoted to everyday life, men were accustomed to employ German designations, whose significations are not to be explained with certainty, a name that harmonizes with the idea of the halls serving for business purposes of all kinds in castles, monasteries, city halls etc., and occurring in this sense in later documents.

77. Residences of Men of Knightly Rank.

By this procedure of fusing the hall with the other rooms of the house, the old idea of the hall coincides with other forms of residences, that had developed meanwhile on the basis of simpler conditions. For beside the important courts of the princes and of great land-owners, at least after the 11th century, rose the dwellings of men in the meantime rising from servile retainers of important masters to knightly condition. The position of the knight differed from that of

the ancient free owner of land, in that he must always be ready for long continued military service, and therefore he received in addition to his fief in land also sufficient labor with it to be relieved from personal labor. This "obligation to serve" was in later times especially emphasized as not merely right, but as an important duty of honor of the nobleman, when it came to maintain the privileges of the nobility against the enriched inhabitants of cities, and to protect the rank of noble against their irruptions. Yet it would be unjustifiable to regard each possessor of a knight's fief as a rich man, who by means of his fief had settled in a stately and picturesque castle. Rather are to be found besides extensive and great buildings of knights also very modest knightly dwellings, and naturally the development took its beginning much more from them.

The thorough difference from the ancient German court lies in the fortification of the residence, and this is based on the entirely changed conditions. Instead of the firmly adherent association of men of equal condition occurred a strong cleavage of the people into contesting ranks and parties. In the period of decaying imperial power, that substantially belongs to the appearance of the rank of knight, the citizens' war sprang from political aims, took acute forms in the separation by formation of parties, and affected the people to its lowest depths. And the chief means of carrying on the war was the injury of hostile adherents in property and estate by the devastation of the lands, by burning the houses and mills, and by the slaughter of their laborers and their cattle. Naturally men sought to protect at least their most precious possessions, by fortifying the residence with its living and dead belongings, and care for the utmost possible security began to become of essential importance in the choice of a site for the dwelling. Men preferred either precipitous projecting hills or sought protection, both in the plain as well as in mountain valleys, behind broad moats or marshy areas. Thus the countries were everywhere covered by fortified houses in such number, that they might serve as bases for strategic combinations, but without such considerations being regarded as the purpose in

establishing these fixed points in those times, at least under the loosely connected conditions of Germany. For by far the most of these castles were still residences of a family, and therefore differ from the fortified custom houses, watch towers and valley granaries, of the kind represented by the "Tiled Tower" near Bozen, and which we must here omit as especially warlike structures.

Men capable of bearing arms were then scarce on such knightly estates of the simpler sort, indeed scarcely sufficient to defend the entire extended farmstead against a continued attack by a stronger force. Then it was necessary to unite the fortifications rather around the master's house and its surroundings, and to secure the remaining portions of the settlement merely by a simple wall or palisades against a surprise by unbidden guests. Thus originated the everywhere commonly occurring form of a farmstead devoted to agriculture, the lower castle, behind which stood the strongly fortified inner castle. But if in the vicinity of the good farm land existed no location suitable for protected living, then the court and the dwelling were entirely separated, and the latter was built entirely independent, merely with reference to security of the location. And this custom extended, since besides the endurance of feudalism, "life in the saddle," the plundering of the weaker by the stronger had begun to serve as a source of support in accordance with rank.

87 78. Castle Nolling near Lorch.

Such a simple knight's residence is nothing more than a strong house. Until in the latest period it so remained, just as then Götz von Berlichingen in his memoirs, besides other appellations for the larger fortresses, repeatedly employs the word "house" for the smaller castles.⁷³ A good impression of such nobles' seats of the smallest kind is given by Castle Nolling, located at the outlet of the Wisper valley into the Rhine valley. (Fig. 74 ⁷⁴). It consisted of nothing more than a fortified house 23.0 × 23.0 ft. inside, whose walls were strengthened on the side of attack by a covering wall 6.56 ft. thick flanked by two round turrets.

Note 73. See Götz von Berlichingen. Description of his life

translated into New High German by Karl Müller. p. 9. Leipzig. h.d. -- "As - - - were, we traveled to upper Burgundy; we took several houses there." p. 64. -- "The confederacy had then taken the entire Wurtemberg country, all fortresses, castles, cities and houses." p. 76 et seq. -- The Castle of Battenberg in Westerwald is repeatedly mentioned as a house etc.

Note 74. From Luthmer, F. Die Bau- und Kunstdenkmäler des Regierungsbezirks Wiesbadens. Vol. 1. Rheingau. p. 123. Frankfurt -o-M. 1902.

On the angle tower marked A remain vestiges of an enclosing wall; yet on account of the narrowness of the rocky hill on which the castle stands, this cannot be the attached living rooms, but only belongs to a ring wall descending from the hill, that might serve for the protection of the Wisper valley. The castle house possessed two stories, one over the other. Nothing remains of its internal subdivision, even if such existed; on the contrary there appears in the masonry the remains of a strong wooden timber construction, as well as of block steps in the form of masses, from which the decayed wood has vanished without traces. Therefore the assumption is well justified, that the castle, which was already mentioned at the beginning of the 12 th century, was first erected as a wooden structure and later strengthened by masonry walls.

Therefore there has remained here the stone authentication of a procedure, for example also proved to us in the settlements of the German Order by contemporary statements. Men secure and occupy a favorable location first by a blockhouse, in order to prevent its appropriation by others, then after a considerable time follow with the building of a stone fortress.

79. Castle Katzenzungen.

At Castle Nolling such an important part is assigned to the fortification, that the purpose of living is strongly neglected; hence as a further example of a "strong house" the view of Castle Katzenzunger near Nals in the Tyrol is here included, although it only dates later, from the late Gothic time. (Fig. 75 75). It possesses a broad cross hall, adjoining which are rows of chambers on each side, thus being a more expressive plan for living. But it clearly shows, how such a house loca-

located on a steep hill, even against the more developed means of attack in the 15 th century, required nothing more than a defensive gallery around it, furnished with loopholes and projecting bays, to afford sufficient protection against armed attack at first. Only instead of the masonry bridge for access and the freely opened Renaissance doorway must we think of an originally movable drawbridge and a smaller entrance doorway covered by it.

Note 75. From my own photograph.

90. 80. The Niederburg (lower Castle) at Rudesheim.

If at Castle Nolling the strong house assumed an extremely plain form, that reminds one of the "house towers" serving the needs of more purely defensive aims, then another and not distant example gives evidence, that but little later and under like conditions of civilization, more complex forms of dwellings were required for wealthier circumstances.

The lower castle in Rudesheim, at first the seat of the Archbishop of Mentz, then the family castle of the much branched and mighty family of von Rudesheim, perhaps arose from a Frankish royal court, also one of the oldest, if not the earliest of the remaining German residence castles of greater extent. According to the opinion first expressed by Cohausen, that on account of the form of the few details, it was erected in the 10 th or 11 century as a plain defensive structure by the Mentz Archbishop, and then about the middle of the 12 th or in the beginning of the 13 th century was rebuilt in a more important residence design. Then were retained the existing strong defensive towers and, with the use of the existing battlemented walls about 24.6 ft. high around the court, there was erected a series of three story wings, that also had cellars beneath on the northeast side. All rooms were vaulted, the lower story having tunnel, and the upper story groin vaults.

We give in Figs. 76 and 77 the ground plans according to the latest representation ⁷⁶ of the building, and note for understanding them, that the lower castle was surrounded by water in ancient times. Under the protection of this moat extending around the building, the whole again forms a strong house, that without advanced works or special warlike arrangements off-

offered security by the thickness of its walls and the easy defense of its access. ⁷⁷ That in the very unusual plan of the narrow stairs may be seen an increase of this safety, was stated in the preceding Heft of this Handbook; ⁷⁸ we here have to do with other arrangements of the ground plan.

Note 76. See Luthmer, F. Die Bau- und Kunstdenkmäler des Regierungsbezirkes Wiesbaden. Vol. 1. Rheingau. p. 24 et seq., where other literature is also to be found. Frankfurt - o .M. 1902.

Note 77. The external windows in the ground story were entirely produced by later openings made in the walls.

Note 78. First edition. Art. 130.

In the ground story we see beside the ancient corner tower the entrance, which is so arranged, that the room into which one first enters, without an intermediate floor extended up to the defense gallery of the upper crown of the wall, thus b being a sort of fortification forming an easily defended fore-court. Just at the left of the person entering here opens a doorway to a room, that we may regard as the place for an armed guard or watch. The other rooms of the ground story are all accessible from a narrow court; they may have served for dwellings of a subordinate kind, for storerooms as well as for cellars. The southeast angle of the building, whose probable outline is inserted in our ground plan according to an older representation, is unfortunately destroyed. Whether according to von Essenwein's conjecture the vaulted castle kitchen lay there or other rooms can no longer be shown. That there formerly existed a second entrance to the castle, as might be assumed from that earlier drawing, is indeed not exactly probable for reasons of the art of fortification. Three separate stairways lead from the court into the upper story, in a remarkable manner without being secured by any kind of arrangement for closing them at the lower ends. But they end above in a small and narrow room, that could be separated by strong doors, secured by heavy cross bars, from the living rooms adjoining on both sides. Below each other are the rooms connected by the stairway landings described; yet the possibility of the independent use of each room is also afforded, while the location

of the stairway is so chosen, that each chamber (the space D is an open court, as noted above) can be reached without passing through another room.

For what the different rooms of the second story served is hard to determine. One may see in the four great chambers perhaps the living rooms of the Archbishop and his dignitaries, in the hall broken at a right angle at the northeast corner a common living room and dormitory of the retainers. That such a common life was entirely usual in even important circles, we know from the descriptions by the court poets. Likewise the architectural description of the Monastery of Farsa (*Ordo Farsensis*) from the 11 th century gives no evidence thereof, when it mentions for male and female retainers, for each a common living and sleeping room in the guest house intended for the reception of important visits.⁷⁹ The conjecture is strengthened thereby, that the rooms were furnished with masonry bench seats extending along the walls.

Note 79. See Schlosser. p. 45. (Note). -- The entire passage may be mentioned here, since it affords a surprising view of the community of living at that time. Strikingly appears the strong emphasizing and the great number of privates. We might see therein a special monastic luxury. (See Latin text).

The third story has a simpler division into rooms. The stairway of the south wing also remains the same in the story beneath, which in the north wing proceeds from the L-shaped hall, ending in the third story without enclosure by a partition wall, but freely within the room, only those of the west wing here retaining the same plans as in the second story. Thus the third story only comprises two large halls and a small room next the small court D. This is a form at least very suitable for serving for the stay of a large garrison of troopers and their officers, even if we can no longer prove, that it was actually so utilized. In Fig. 78 we also give the section after von Essenwein's attempt at restoration, wherein only the roofs and a part of the tower rising above them are freely restored. One may see from this, how favorable for defense the entrance was arranged, and how decidedly the living rooms are separated from the middle tower, that only served for defense

and was only accessible from the upper place of defense. According to the description given above, the plan of the building makes it possible in like to gain access to the rooms of the uppermost story, and the separation of the defensive place, accessible only therefrom, from the remaining parts of the building.

Since thus at a quite early time different forms of dwellings for different requirements existed beside each other, while each man must even adjust himself according to his means, this diversity further continued until the end of the middle ages. With the improvement of all conditions of life, that the increasing development of civilization brought with it, the examples of richer plans of dwellings indeed increased, without the disappearance of plainer designs. On the contrary, these received their special improvement besides the development of palatial residences.

81. Castle House at Hattenheim.

As for what comfort required, the house built about the 14th century by the noble von Hattenheim stands almost exactly at the same point as the Castle Nolling (Figs. 79, 80 ⁸⁰) It possesses as a main building a living tower of 35.5 × 23.0 ft. in the clear width, which contains a living room in each of the four stories.

Note 80. From Luthmer, F. p. 182.

In the ground story are still found the remains of a great fireplace; the windows of all stories have chamfered stone jambs and corresponding central mullions. A wall is furnished with a gallery for defense, and adjoins at one corner a lower defensive tower, encloses a small court of square form, and is attached to a low and later built dwelling. Aside from this wall, the farmstead lacks all arrangements for defense, and at most it can have afforded security against the sudden attack of irregular bands. Thus it forms the transition to the simple country seats of the nobles, where fortification could often be entirely omitted, in accordance with the change in the condition of the times.

82. Sanecker Court at Eltville.

The Sanecker Court ⁸¹ at Eltville, also termed Stockheimer

It contains a single subterranean tunnel vaulted with
 (Fig. 31), that by an underground passage is connected with
 the adjoining kitchen building, and by a wide flight of steps,
 that at the rear of the building is set out the stairs
 casks, was also directly accessible from the exterior. The
 ground story (Fig. 32) exhibits an only later subdivided mid-
 dle hall with a considerable room adjacent on the right and
 left. On the wall opposite the present entrance remains the
 traces of an entrance later walled up. We may not conclude
 from this, that the building formerly served for public purpo-
 ses, but see in this lower room the windows hall with two
 side rooms serving in the work as well as for the ministrat-
 ion of the farmstead. From the ground story a winding stair-
 way leads upward (Fig. 33). There we find a little vestibule,
 adjacent to the stairs is the cellar stairs, a small
 apartment is added over the structure of the cellar stairs,
 and a connecting passage again leads from this story to the
 upper story of the kitchen building. Thus the whole forms a
 right comfortable dwelling for a moderate requirement in the
 rooms, that would also well satisfy modern demands. It is the-
 refore completely as a modern building. The kitchen building
 court plan, that a detached building was erected for the kitch-
 en. The kitchen building is a small building of wood and
 stone; it acquires an extremely attractive and picturesque ap-
 pearance by the combination of the half-timbered structure
 the octagonal stairway tower and of the half-timbered structure
 over the entrance to the cellar.

Court, in such a dwelling of a truly royal stamp, and therefore well to mention here as an example, even though by its location in the outworks of the small rural city, according to its external subdivision may have already formed a transition to the city dwelling. The building (Figs. 81 to 85) by its forms may indeed belong to the second half of the 15 th century, but it still conceals in its western portion the walls of an older Romanesque structure.

Note 81. See Eichholz, E. Zwet Eaelhöfe in Eltville -o-Rh. p. 117 et seq. Denkmalpflege. 1902.

It contains a single subterranean tunnel vaulted wine cellar (Fig. 81), that by an underground passage is connected with the adjoining kitchen building, and by a wide flight of steps, that at the same time served for taking in and out the wine casks, was also directly accessible from the exterior. The ground story (Fig. 83) exhibits an only later subdivided middle hall with a considerable room adjacent on the right and left. On the wall opposite the present entrance remains the traces of an entrance later walled up. We may not conclude from this, that the building formerly served for public purposes, but see in this lower room the winepress hall with two side rooms serving in the work as well as for the administration of the farmstead. From the ground story a winding stairway leads upward (Fig. 83). There we find a little vestibule, adjoining which on three sides are the living rooms. A small apartment is added over the structure of the cellar stairs, and a connecting passage again leads from this story to the upper story of the kitchen building. Thus the whole forms a right comfortable dwelling for a moderate requirement in the rooms, that would also well satisfy modern demands. It is there very remarkable as a reminiscence of the ancient scattered court plan, that a detached building was erected for the kitchen. The exterior exhibits plastered surfaces of quarried stone with few, though ornamentally treated details of red sandstone; it acquires an extremely attractive and picturesque effect by the harmonizing of all proportions, by the addition of the octagonal stairway tower and of the half-timber structure over the entrance to the cellar.

THE TOWER OF GÖBEL

The tower of Göbel is a small, square, stone building, about 10 feet high, with a flat roof. It is situated on a hill, and is surrounded by a low wall. The tower is made of rough-hewn stone, and has a single window on each side. It is a very simple and unpretentious building, but it is a very interesting one, because it is the only one of its kind in the district.

Life with the expression of a certain imposed reserve. And men understood how with these simple means to gracefully treat not merely such small houses. Bild. 83 represents the Schönborn house at Bismarck, 18, and it may also be interesting to the reader.

Finally, also with these two other important points of an extensive seat of a nobleman with little greater expenditure. The building was constructed in the style of the 18th century, and is a very fine example of the architecture of that period. It is a very large and imposing building, and it is a very interesting one, because it is the only one of its kind in the district. It is a very simple and unpretentious building, but it is a very interesting one, because it is the only one of its kind in the district.

It is a very simple and unpretentious building, but it is a very interesting one, because it is the only one of its kind in the district. It is a very simple and unpretentious building, but it is a very interesting one, because it is the only one of its kind in the district.

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82. Schönborn Court at Geisenheim.

Just simplicity and lightness are the means by which in those times men combined the comfortable and joyous spirit of Rhenish life with the expression of a certain imposing reserve. And men understood how with these simple means to gracefully treat not merely such small houses. Fig. 86 represents the Schönborn Court in Geisenheim, 82, and it may show how animatedly and ef-

96 fectively also were treated the greater structural masses of an extensive seat of a nobleman with little greater expenditure. The building shows an astonishing similarity to the preceding example in the general design. This is perhaps to be referred to the fact, that it was erected by the same family of von Stockheim as that, and thus perhaps by the same architect.

82. From Guthmer. p. 79.

84. Thumberg near Sterzing.

Similar requirements as these seats of noblemen in the Rheingau were satisfied by many of the more modest residences of nobles in the Tyrol. We give as a characteristic example, both of the ground plan and of the architectural treatment as well, the seat of Thumberg near Sterzing in Figs. 87 to 89.⁸³ The structure but slowly originated in its present form. As the oldest portion must be regarded the middle part extending upward like a tower on the exterior, where it may indeed be doubtful, whether it already dates from the time about 1230, at which the little castle was first mentioned in documents.

Note 83. See Steffen, H. *Denkmäler deutscher Vergangenheit*. Vol. 1. pl. 8. Berlin. n.d.

It contains in each of its four stories a square anteroom with a stairway, and three rooms accessible therefrom. From one of these rooms, that serves as a kitchen, is separated a privy externally corbelled out. Two additions of the years 1575 and 1600, but which with two and three stories each remain lower than the height of the main building, have added other warmed rooms.

We find similar ground plans at so many Tyrolese seats of noblemen, for example at the well known Göchel's Tower in Sterzing (Fig. 397). Besides occur frequently, indeed somewhat later in time, a form of ground plan, similar to the arrange-

arrangement of the Frankish farm house, in which the separate rooms are arranged along both sides of a great middle hall extending through the depth of the house. When such a middle hall was then allowed entirely or in part to extend through two stories and was surrounded in the upper story by connecting passages, interiors of very picturesque and rich forms originated, that acquired the highest influence in the development of later halls in country houses.

On the exteriors the Tyrolese seats of noblemen are always of great simplicity. Accompanying the eaves of the roof with small battlements, as well as with stepped and battlement gables of graceful scale, as shown by our examples, are the usual and simple means by which these houses harmonize with the scale of surrounding nature. Besides the corbelled bay windows everywhere satisfy greater enjoyment in the treatment of the masses.

85. Budden House at Kammin.

We add here a house from a region further east, that in spite of many later changes has indeed retained the form of a late mediaeval important court structure, the so-called Budden House at Kammin in Pomerania. It does not especially come into consideration, that it was intended as the former Cathedral House for the reception of an important priest; for those came from the class of the nobility, and we may assume, that in their requirements for the arrangement of a dwelling, they did not differ from their secular relatives. The house has a cellar under its entire extent (Figs. 90 to 92 ⁸⁴) and again contains in both occupied stories a middle hall, but which receives the stairway in its rear portion; it is surrounded on three sides by numerous living rooms. All is managed less for magnificence than for comfort in living; even the small story heights of 9.8 to 12.5 ft. in the clear are so determined with reference to the northern climate for the same end. In the form treatment of the exterior is the rich gable with its many interlacing lines in brickwork a characteristic example of the transition forms of the Renaissance, in which the middle ages finally continued.

Note 84. From *Denkmalpflege*. 1905. p. 73.

86. Castle Eltz.

For the forms of such seats of noblemen some simple plans have served as examples for the survey. Not always are the ground ideas so clearly followed; they are rather frequently dimmed and confused. To this contributes on the one hand the narrow limitation, to which house architecture must submit on a fixed castle location and in connection with arrangements for defense, whereby irregular forms and often strong displacement of some parts occur. To this was added the mediaeval custom of keeping an important castle seat as a so-called "joint castle" in common use by different branches of the family, while each family then controlled its own dwelling on the restricted common possession, there arose a mass of separate buildings, that at first makes an extremely developed impression, but on close examination separates into a number of relatively simple parts. As an example of such a castle in joint ownership, Castle Eltz near Brodenbach on the Moselle may be mentioned on account of its picturesque design. (Figs. 93⁸⁵ and 94⁸⁶). It is divided into no less than five parts, that we have designated by numbers on our plan. The oldest portion is Platteltz, a residence tower 5 stories high, that is in the possession of the count of the family line. It is only connected by a low building with No. 2, Eltz-Übenach, a rectangular dwelling showing two rooms in each story. Beyond the curved entrance to the castle with its side buildings rises in quite similar architectural forms the building group 3 - 4, which served for the two lines of Gross-Rodendorf and Klein-Rodendorf. Finally adjacent to Platteltz is No. 5, the building of the line of Eltz-Kempnich, only rebuilt after the mediaeval period. The whole rises externally in an entirely complex richness of grouping into a masterpiece of romantic and picturesque effect; likewise in the court by projections and recessions, stairways and vestibules, compose picturesque impressions in great number. But the different parts, each made independent by a separate arrangement of stairways, are in themselves of a very simple kind, easily viewed, and are entirely similar to the simple seats of noblemen first mentioned. We also find on this castle appearing so extremely rich, the opinion justified, that the requirement made about the end of the middle ages concern-

Note 98. From a drawing by R. Rappert in Deutsche Bauzeits.

100 concerning the number and connection of the living rooms, were of a quite modest kind, even in important classes.

Note 85. From *Deutsche Bauzeitung*. 1886. Pl. 7.

Note 86. From a drawing by R. Perrat in *Deutsche Bauhütte*. 1907. No. 5.

87. More Extensive Residence Castles.

Beyond these limits, that were prescribed for the landed nobility, both by the customs of living and by its resources, there rise then in all lands the residences of the ecclesiastical and secular rulers. Here it was required to not only create for the small number of relatives more or less comfortable shelter; in the more developed conditions of the later middle ages it no longer sufficed, as in the 12 th century, besides the warmed room of the princely family to create a festal hall and merely another hall for the shelter of the retainers. Besides the dwelling of the master, and besides the rooms required for the expression of princely magnificence, there were now needed a greater number of separate rooms for the number of court officials and other vassals, classified in more numerous graduated ranks. The necessity of providing increased space for the rooms usually devoted in limited dimensions to the earlier defense, already led to and required the combination of the formerly detached buildings into larger groups of buildings. At the same time the increasing number of occupants brought a greater comfort of existence, so that in place of the separate single structures scattered over a larger area, a united and larger building was erected, in which the different divisions could be made without leaving the protecting roof. Men certainly satisfied for a long time such internal connection by the simple possibility of passing from room to room to reach the desired place. The separation of living room and connecting corridors, indispensable to us, and which permits passage without entering the living rooms, was even yet in general unusual for the highest classes.

88. Archbishop's Palace at Narbonne.

The Palace of the Archbishop at Narbonne (Figs. 95, 96 ⁸⁷) substantially dates from the 13 th and 14 th centuries, and it may pass for a good example of such a greater design. As shown

by a bird's eye view, it lies beside the Cathedral and is loosely connected with it by a court with porticos, otherwise being an independent structure outside the course of the ancient city wall. One may easily distinguish in it between the arrangements serving for defense, among which the square corner tower occupies a dominant place, and the rooms for use. And among these again the plain early Gothic hall building V⁸⁸ is separated from the wings of the living rooms.

Note 87. From Viollet-le-Duc. Dictionnaire etc. Vol. 7. p. 21 et seq.

Note 88. See the same. Vol. 8. p. 92.

These lie on both sides of the strongly fortified main entrance passage K. They contain at p and o, as well as in the wing marked M a considerable number of rooms of different dimensions. Above the guard room lying at v v' is the castle chapel; adjoining it is a further two story building with living rooms. The expression of the whole is unusually resistant and warlike. In the massive towers and the fortifying of the external facades by battlements and pouring holes is very plainly expressed the intention to afford a counterpoise to the warlike strength of the citizens and the powerful attacks of the secular masters of the city.

According to the present views of making war, one would be inclined to assume that the vicinity of the Cathedral and the weak points, that were given for the defense in the cloister c and the garden extending to the choir of the cathedral, perhaps made it impossible to withstand a long and formal siege in this castle. But whether this assumption applies to mediaeval conditions may appear quite doubtful, if one considers, that the example to be described soon, and which is scarcely more strongly fortified, held out during sieges lasting a year.

89. Palace of the Popes at Avignon.

In a similar sense, but considerably more spacious and greater, the vast Palace of the Popes is arranged at Avignon. Likewise in it beside the great hall, occupying an entire wing by itself, there are separate rooms of many kinds in long wings, that extend around two great courts. Both the influence of a southern mode of living as well as of a monastic life here sh

show themselves, in that one of these courts is so formed like a cloister, that along the side of the rooms next the court is added a covered portico as a connection between the separate rooms. The dimensions of the whole are too great, for us to be able to represent them here at the scale once chosen; reference must rather be made to the illustration in Viollet-le-Duc.⁸⁹

Note 89. Viollet-le-Duc etc. Vol. 8. p. 24 et seq.

90. Bishop's Castle at Trent.

How the living apartments lie around such a court with porticos after the Italian custom, when one would arrange on the narrow area of a castle such a plan for a dwelling, may be shown by the old Bishop's castle at Trent. (Fig. 97). It is a plan entirely of the Italian kind, that is also executed in purely Italian forms. It has retained but few remains of the ancient fortified castle, but shows in the external appearance ever yet plainly its origin.

The ancient round tower has indeed been retained, but probably only because men feared to tear down the mass of the walls, perhaps from piety, but certainly not to shut themselves up and be besieged in it.

As the centre of the design appears the court B, which is surrounded by porticos in each story, in which stairways in straight flights lead upward. These porticos are adjacent to notably irregular rooms and small halls in different heights. A rich and picturesque treatment was given to the entire building; but the climax is a gallery architecture imitated from the palaces of Venice, which breaks through the wall enclosing the western wing of the passage. As a reminiscence of the earlier time appear battlements, but which only contribute to the picturesque treatment, when they give to the building, rising high above the city, a corresponding termination.

91. House of the Grand Master at Marienburg.

Likewise to a semi-ecclesiastical class belong the great buildings for dwellings, that of the Teutonic Order Of Knights erected at the centre of their state at Marienburg in Prussia, when they stood at the height of their power. Since they had made the territory under them from small beginnings into that mediaeval state, unsurpassed in its good arrangement and close

union, then also starts the building of the rest of the Grand
 of arms was previously given in the preceding part of this B
 castle, that served as shelter for the body of the knights, a
 and which repeats at a larger scale the regular plan of the
 castles of the Order built around a square court like a cloister,
 ter, as we have explained for the example at B (Art. 41).
 We have to occupy ourselves now with the residence of the Grand
 and master standing in the lower castle. It is a stately building,
 that the Grand Master Winrich von Knipode built for himself
 self during the years of his Government (1381 - 1383) in addition
 tion to the building of the minor castle already erected by
 reduced by individual custom for the residence of a ruling monarch
 arch -- and such a position was in fact occupied there by the
 Grand Master. Thus it makes little difference, that the Grand
 Master lived as a celibate: for he also possessed no family in
 the sense of kinship, but still he must provide shelter in his
 vicinity for what the middle ages called his family in the ancient
 sense: for the crowd of trusted counsellors and officials, that formed the immediate surrounding of the ruler.
 Thus we find first (first. 98 to 101) and directly accessible
 from the court, the great hall of the knights, 85.4 x 164.1 ft.
 through two stories. With it by a staircase B is connected the
 proper dwelling of the Grand Master, that otherwise lies entirely
 independent in the uppermost story of the projecting addition.
 It is reached from the court by access at C and D by means of two winding stairways B and D. The lower story
 of the added structure contained only a number of useful
 apartments, probably living and sleeping rooms for the immediate
 attendants of the Grand Master. His own dwelling in the
 third story is grouped around a very imposing vaulted hall,
 (fig. 408), that separates the rooms into two divisions, and
 extends at the lower end of our illustration into a vestibule or
 living or reception hall, a sort of vestibule or "Antichambre".

union, then also stands the building of the seat of its grand master without comparison. The general plan of the great place of arms was previously given in the preceding Heft of this Handbook,⁹⁰ as well as the form of the ground plan of the main castle, that served as shelter for the body of the knights, and which repeats at a larger scale the regular plan of the castles of the Orders built around a square court like a cloister, as we have explained for the example at Riga (Art. 41).

We have to occupy ourselves here with the residence of the grand master standing in the lower castle. It is a stately building, that the grand master Winrich von Kniprode built for himself during the years of his government (1351 - 1382) in addition to the building of the middle castle already erected by Dietrich von Altenburg (1335 - 1341). It presents everything required by mediaeval custom for the residence of a ruling monarch -- and such a position was in fact occupied there by the grand master. Thus it makes little difference, that the grand master lived as a celibate; for he also possessed no family in the sense of kinship, but still he must provide shelter in his vicinity for what the middle ages termed his family in the ancient Roman sense; for the crowd of trusted councillors and officials, that formed the immediate surrounding of the ruler.

Note 90. First edition. Art. 108.

Thus we find first (Figs. 98 to 101) and directly accessible from the court, the great hall of the knights, 98.4 × 164.1 ft. in ground area, that with its vaults 29.5 ft. high extended through two stories. With it by a stairway B is connected the proper dwelling of the grand master, that otherwise lies entirely independent in the uppermost story of the projecting added building. It is reached from the court by access at C and D by means of two winding stairways E and F. The lower story of the added structure contained quite a number of beautiful apartments, probably living and sleeping rooms for the immediate attendants of the grand master. His own dwelling in the third story is grouped around a very imposing vaulted hall, (Fig. 409), that separates the rooms into two divisions, and extends at the lower edge of our illustration into a broad waiting or reception hall, a sort of vestibule or "Durnitz." It

contains in one of the window recesses at G a well, and at J
provided by a richly ornamented portal entrance to the chief
entrance, and at K a small square window, which is
also very interesting room of the so-called winter refectory, so-
out 41.0 ft. square and with vaults 27.9 ft. high. Adjoining
it are the proper living rooms, which lie in the earlier build-
ing of the grand master Dietrich von Altenburg. On the left
of the great hall are two living rooms with a private connect-
ing passage, on the right being the house chapel with star-
vault, adjacent to which is the cross vaulted sleeping chamber
with two adjoining chambers. Still behind is finally the house
chamber into which leads the previously mentioned stairway B
from the hall or the kitchen. A small call K in the thickness
of the wall shows as is intended the formerly existing staircase
a slit the proceeds in the hall of the kitchen.
Note 91. The name of "Keller" is applied to nearly all the
larger halls in Nuremberg. We have nowhere to the local char-
acter, without desiring to express thereby, that all these rooms
were used as refectories.
All in all, with the not very extensive rooms arranged for
daily use (two living and one sleeping room), are here combined
a very impressive group of interiors, the two state halls (A and
C) and the hall of the grand master (D) and the kitchen (E) and
the hall. The stairway is certainly small, according to the
plan of the building, but unusually good in the plan, in that in several
places (A and C) the stairway is not only a simple passage, but
when the different apartments. Even in the group of rooms be-
fore the chapel and the sleeping chamber, where this is not the
case, care has been taken at least for the stairway B to
be reached in two different ways. This shows an advance, that
in general is not exhibited elsewhere for centuries.
Entirely outside of the otherwise usual is also the artistic
treatment of the building. Our section in Figs. 101 and the 1

contains in one of the window recesses at G a well, and at J provides by a richly ornamented portal admission to the chief state apartment, the summer refectory (Remter), vaulted boldly on slender granite pillars 32.8 ft. high and only opening on three sides by windows with tracery.⁹¹ (Fig. 403). Without direct connection, but reached by a small passage H without entering the great hall, it is succeeded by the more modest yet also very imposing room of the so-called winter refectory, about 41.0 ft. square and with vaults 27.9 ft. high. Adjoining it are the proper living rooms, which lie in the earlier building of the grand master Dietrich von Altenburg. On the left of the great hall are two living rooms with a private connecting passage, on the right being the house chapel with star vault, adjacent to which is the cross vaulted sleeping chamber with two adjoining chambers. Still behind is finally the house chamber into which leads the previously mentioned stairway B from the hall of the knights. A small cell K in the thickness of the wall seems to be intended for secretly observing through a slit the proceedings in the hall of the knights.

Note 91. The name of "remter" is applied to nearly all the larger halls in Hartenburg. We here adhere to the local custom, without desiring to express thereby, that all these rooms were used as refectories.

All in all, with the not very extensive rooms arranged for daily use (two living and one sleeping room), are here combined a very impressive group of interiors, the two state halls (remters), the chapel and the single splendid room forming a palace hall. The stairways are certainly small, according to the custom of that time, partially dark and incorrect according to our ideas. But unusually good is the plan, in that in several places special corridors make possible convenient passage between the different apartments. Even in the group of rooms before the chapel and the sleeping chamber, where this is not the case, care has been taken at least for the stairway B to be reached in two different ways. This shows an advance, that in general is not exhibited elsewhere for centuries.

107 Entirely outside of the otherwise usual is also the artistic treatment of the building. Our section in Fig. 101 and the 1

Later internal views (Figs. 408, 409, 410) exhibit the same
 It is evident that the tower was built at the same
 traces windows in the summer refectory, together with the al-
 nated and also structurally very bold treatment of the walls
 wall, and the tower is built in a similar manner to the
 alignment of the interior entirely independent arrangements for
 not one could be found at the top of the structure. In the ex-
 ternal elevation (Fig. 100) the same execution of the subdi-
 vision by piers imitates to the whole the impression of a
 baroque, that is softened only by the window tracery and the
 breadth of the corbelling at the angles. It almost has
 the appearance, as if the risky summing of the upper parts
 of the piers by slender granite columns is the same as to ex-
 press some of the best. Then could well do this, since
 the river water flowing past made it impossible on this side
 of the castle to bring heavy cannon as near as necessary.
 But with the effect of heavier cannon shots, such slender mem-
 bers must become dangerous, but this did not require consid-
 eration at the date of the building of this house. Yet after
 the lapse of a half century until heavy cannon of cast-
 iron the famous "Blitz Reg" of the Elector Frederick I of Bran-
 denburg, overcame previous opinions upon a war on fortifica-

tion, that we described in Art. 78. We here refer to the
 general elevation of the castle given there (Fig. 89), since
 it shows the same features as the plan of the castle.
 is, also occurred elsewhere.
 The tower is built, that is, it is built in a
 manner, that is, it is built in a manner, that is, it is
 building it is only a round tower capable of defense, at the
 other end being a room over the tower entrance furnished with
 two bay windows. Beside this a winding stairway forms the ac-
 cess from the castle court to the upper hall. As in Marienburg
 a similar staircase was built, that is, it is built in a
 manner, that is, it is built in a manner, that is, it is
 of the castle, that is, it is built in a manner, that is, it is
 very different from the wall. This is the case in the castle

later internal views (Figs. 403, 406, 409) exhibit the unusually splendid effect, produced by the proud vaults and the rich tracery windows in the summer refectory, together with the dignified and also structurally very bold treatment of the palace hall, and the manner in which in addition to the splendid development of the interior entirely independent arrangements for defense could be found at the top of the structure. In the external elevation (Fig. 100) the tense execution of the subdivision by piers imparts to the whole the impression of proud hardness, that is softened only by the window tracery and the gracefulness of the corbellings at the angles. It almost has the appearance, as if the risky supporting of the upper parts of the piers by slender granite columns is the same as to express scorn of the besiegers. Men could well do this, since the river Nogat flowing past made it impossible on this side of the castle to bring heavy catapults as near as necessary. But with the effect of heavier cannon shots, such slender members must become dangerous, but this did not require consideration at the date of the building of this house. Yet after the lapse of a half century until heavy cannon of besiegers, like the famous "Dirty Peg" of the Elector Friedrich I of Brandenburg, overthrew previous opinions upon a war on fortifications.

92. Castle Vayda-Hunyad.

Also about the same time dates the erection of Castle Vayda-Hunyad, that we described in Art. 72. We here refer to the general elevation of the castle given there (Fig. 69), since it shows, that the same tendencies, as in the preceding example, also occurred elsewhere.

Likewise here the hall, which as usual was divided by a row of piers, forms a tolerably independent structure. Directly adjoining it is only a round tower capable of defense, at the other end being a room over the tower entrance furnished with two bay windows. Beside this a winding stairway forms the access from the castle court to the upper hall. As in Marienburg a separate passage, here carried along the outside of the wall of the castle, makes a connection between the stairway and the rear portion of the hall. And this passage is most gracefully

adorned by corbelled bay windows and rich traceried members, thus forming a counterpart to the decorations of the grand master's house at Marienburg. That by it the defensive capabilities of the castle were substantially reduced, we can scarcely assume with reference to its inaccessible and high location. Relatively weak parts, such as angle turrets, pouring bays and the like, men retained even after the introduction of cannon. If they were destroyed, this was no great injury, if the heavy structural masses only retained their positions. This ornamental passage appears to us only as a very successful attempt to treat the rigid masses of such a great castle more pleasingly by the piquant charm of its form treatment, and at the same time to annex to the festal hall a passage with small and highly charming separate rooms.

93. Albrechtsburg at Meissen.

The period succeeding the erection of the buildings last described must have made the plans of fortified residences of monarch substantially more difficult, by the changes in the nature of war and by the occurrence of heavier artillery, and so much the more, since unlike the castle of the simple landed noble, these could not by an inaccessible location enjoy a certain protection against the new war machines. On the other hand, they were also suited to make less indispensable in general strong fortifications for castles. For in a part of Europe, particularly in England and France, by the regal supremacy was peace so far established in the land, that men required less than before a permanent protection by walls and moats. But in other countries, as in Germany, the more important landed nobles developed such an extensive association, that no longer by the assault on a prince's castle, but first of all in open battle must be sought the decision of war.

Thus is explained that occasionally already in the 15th century at the restoration of earlier castles the warlike capability of resistance could be left strongly inferior to considerations of magnificence and of convenience.

159 The grandest of all similar structures erected at the close of the middle ages in Germany is the Albrechtsburg at Meissen.⁹² It indeed bears the name of castle (Burg), and also has in its

116 picturesque appearance something recalling such, but in fact is nothing else than a residence arranged for princely conditions, without any comparison with the castles or palaces previously mentioned. Not a single battlement any longer adorns the castle. (See the adjacent plate and Fig. 102). It was built in 1471 - 1283 by the brothers Elector Ernst and Duke Albrecht of Saxony, after the removal of the old margrave's castle by master Arnold Bestpheling,⁹³ as a joint residence. (Contemporary with the upper part of the cathedral adjoining the western facade). When the division of the Saxon lands occurred in 1485, Albrecht the younger received the castle, that later received his name; some small structures were yet erected in 1520 - 1524.

Note 92. See Puttrich, L. Denkmale der Baukunst des Mittelalters in Sachsen. I. Meissen. Abt. 1. Vol. 2. p. 1 et seq. Leipzig. 1845 - 1850. -- Where is also given the corresponding bibliography. -- Further, Gurlitt, C. Das Schloss zu Meissen. Dresden. 1881.

Note 93. The very common explanation of this name as Arnold from Westphalia is certainly questionable. In all cases this very important master belongs by his training, not to Westphalia, but to upper Saxony.

Above a low ground story with offices standing on a level with the court, but concealing several stories of cellars beneath itself, rise two massive and richly vaulted stories, the second story containing two great halls besides some rooms. Over this the third story comprises only small chambers, 14 in number. These halls are reminiscences of the ancient palace structures. The warmed room of the earlier period is in them placed over the palace building, whereby indeed the appellation of "kemenate" has only remained attached to the northern portion, that served for the women. Over these two vaulted stories there lies in the attic yet a third one, lighted through massive stone dormer windows. Notable is the execution of this building in so far, that by building over the mason haunches of the vaults, the stories become narrower upwards, so that also the story of living rooms in the roof has vertical walls standing on the lower vaults between the dormer windows. Its

ceilings are indeed formed by the first coved beams of the roof; but it would otherwise have been entirely possible to vault it. According to ancient custom, to the fore hall in the second story adjoins a beautiful chapel, that lies in a projecting tower. Characteristic for the structure are the window recesses found in all stories, reducing the massive walls to mere piers, and which even in the attic story are vaulted little chambers in form; then the connecting passages are partially enclosed externally. The separate stories were connected by two winding stairways, called "winding stones" in the old documents, both on the western side of the wing extending from south to north. That one located in the angle on the north wing forms the direct connection of the women's apartments in the third story with the principal hall and the court. The other is characterized by an external gallery in each story, and is the main stairway, that rises from the court to the ante hall, in which according to ancient custom the retainers and those otherwise connected with the court assembled. Yet a public court of justice was scarcely held therein longer, since also the chancellery rooms appertained thereto, which were accessible by the same stairway and were found in the third story. If we consider the latter, then the plan for a residence in common for two princely families, that with retainers consisted of about 60 persons, is not large and is only conceivable when we learn, that for example seven waiting gentlemen belonging to the first noble families occupied one room in common. Perhaps an extension would also have occurred here by other structures, had not a few years after the completion of the existing structure, one of the brothers left Meissen in consequence of the division of the country, the other retaining Meissen but transferring his residence to Dresden. Thus directly after its completion the building had become superfluous, and it chiefly served for unimportant purposes, even if it was preserved for a time.

An artistic ornamentation it therefore never received later. Our illustrations reproduce the ground plan of the second story, as well as the section through the south to north wing and the chapel tower.

94. Oxburgh Hall in Norfolk.

Yet farther than in Germany did men go in England in this departure from the design of the ancient fortified castle. The Castle of Meissen follows in its outlines the irregular form of the rocky hill, according to ancient custom, thereby also after ancient usage receiving an enhanced picturesque effect in the interior as well as on the exterior. How men in England already at the same late Gothic period on the contrary preferred the endeavor for greater regularity may appear from Fig. 103,⁹⁴ the plan of the ground story of the Castle of Oxburgh Hall in Norfolk. The castle was built in the year 1482, and lies around a rectangular court, its wings attached at right angles. Omitting all other fortifications, it is only protected by a moat, over which a drawbridge leads to the gateway tower of symmetrical form.

Note 94. From Muthesius. p. 34.

The distribution of the rooms is again based on the regard for the great hall as the central point of the house. Adjoining it on the right are the very richly developed housekeeping rooms, according to the English custom, on the left being the principal living rooms. Very characteristic of mediæval conditions is it, that also for this unified building erected with considerable means, the connection between the separate parts occupied as living rooms is not by corridors, but by the abundantly arranged stairways. This was originally the case in a greater degree, before some corridors were subsequently constructed in the left wing.

It should be mentioned here, that likewise in plans of castles in Moravia the form of rectangular regular court designs frequently occur.⁹⁵

Note 95. See Prokop, A. Die Markgrafschaft Mähren in kunsthistorischer Bedeutung. Vienna. 1904.

55. Principal Characteristics.

When we turn to the architecture of cities, we enter a world that by its nature and origin must very materially differ from the preceding chapters.

The earliest cities, which have existed from the earliest times of the western middle ages; we could follow with great certainty, how they everywhere developed from the archaic conditions of life in cities occurred from small beginnings without direct connection with the urban city development. It already expressed the strongest opposition in the first steps of development, just because the combination of the citizens under a city government representing the community was an irrevocable condition to the main principles of state and social class, based only on personal feudal conditions in the early middle ages. And the cities found the strength to overcome this opposition, substantially only because in contrast to the entirely peasant agriculture of the earlier ages and to the knightly class, they advanced by commerce and manufacturing to the social economy and thereby to more power. Thus with the passing localisation of the city came the crowding of many into a narrow area, that again was opposed to the rural conditions as of all dimensions. Thus in the developed city of the later middle ages all conditions were concentrated in a small area with the popular traditions of the earlier time, and naturally all this was impressed on the architecture of the cities in an entirely new and unique tendency. But these contrasts are not to the eye the first the results of a long development. Since all city life could not gradually grow out of the rural process the secession of new citizens could only come in a sudden leap, and the city was at first transferred to the open country was at first transferred to the open country. In so far as the opinion, now a commonplace of economic

Chapter 3. City Dwellings.

95. Principal Characteristics.

When we turn to the architecture of cities, we enter a domain, that by its nature and origin must very materially differ from the preceding Chapters.

The dwellings previously described were based on the conditions of living, which have existed from the earliest times of the western middle ages; we could follow with great certainty, how they everywhere developed from the archaic conditions of prehistoric ages with tolerable uniformity. It is otherwise with city dwellings. These were developed under conditions foreign to the earlier middle ages; for the rise of mediaeval life in cities occurred from small beginnings without direct connection with the antique city development. It already experienced the strongest opposition in the first steps of development, just because the combination of the citizens under a city government representing the community was an insoluble contradiction to the main principles of state and social classes, based only on personal feudal conditions in the early middle ages. And the cities found the strength to overcome this opposition, substantially only because in contrast to the entirely peasant agriculture of the earlier ages and to the knightly class, they advanced by commerce and manufacturing to financial economy and thereby to money power. Thus with the increasing population of the city came the crowding of many into a narrow area, that again was opposed to the rural spaciousness of all dimensions. Thus in the developed city of the later middle ages nearly all conditions grew into strong contrast with the popular traditions of the earlier time, and naturally all this was impressed on the architecture of the cities in entirely new and unique tendencies. But these contrasts apparent to the eye are first the results of a long development. Since all city life could but gradually grow out of the surrounding rural conditions, and since in the time of its strong progress the accession of new citizens could only come from the rural folk, then must we also assume at once, that the mode of life in the open country was at first transferred to the city. In so far will the opinion, now a commonplace of techn-

technical literature, scarcely in theory as doubted, that the citizen's house was derived from the rural dwelling. And yet it is not to assume, that the forms of peasant houses known to us today were the primitive prototypes of city houses. It may already be expressed here, that in this case the citizen's house must have taken a different form, than that shown by its oldest remaining examples. This compels us to seek a different explanation of the origin of these forms of houses. But great difficulties here occur in determining the actual course of development, then in the other divisions of our description. They first of all lie in the greater diversity of requirements, one as in the city house such a uniform class of society as the supporter of architecture, as the nobility and princes in the open country. Here the most diverse classes rather build each in its own way. This partly lies in the first origin of the city and partly in the role of its later development, and it is therefore differently expressed.

26. Different composition of the citizens.

The origin of the cities, however infinitely it differs, may be divided into two great classes for our consideration. The one was formed a regular composition of the population, if the city grew gradually, originating as an addition to an already existing country residence, as occurred at a castle, a royal court, or a bishop's seat, the other as a result of a sudden development, out of the residences of nobles, and the like. For the courts originally formed a special kind of nobles, and naturally these were not influenced by the peasant's houses, in which one might naturally see the prototype of the city house, but they probably represent traces from the seats of nobles as made known to us in the preceding chapter. Such a mode of origin is not influenced by the primitive situation, the city as it had small means at command.

Each one in the arising cities of the 11th century, who was not a citizen with full rights, must already be not a citizen, and the citizen's house was connected the possession of a share in the landed

technical literature, scarcely in theory be doubted, that the citizen's house was derived from the rural dwelling. And yet it is rash to assume, that the forms of peasants' houses known to us today were the primitive prototypes of city houses. It may already be expressed here, that in this case the citizen's house must have taken a different form, than that shown by its oldest remaining examples. This compels us to seek a different explanation of the origin of these forms of houses. But great difficulties here occur in determining the actual course of development, than in the other divisions of our description. They first of all lie in the greater diversity of requirements under which the city house was developed. We do not have before us in the city house such a uniform class of society as the supporter of architecture, as the nobility and princes in the open country. Here the most diverse classes rather build, each in its own way. This partly lies in the first origin of the city and partly in the mode of its later development, and it is therefore differently expressed.

96. Different composition of the Citizens.

The origin of the cities, however infinitely it differs, may be divided into two great classes for our consideration. There was formed a peculiar composition of the population, if the city grew gradually, originating as an addition to an important country residence, as occurred at a castle, a royal court, a bishop's seat, the court of a landed nobleman, or even a group of the residences of nobles, and the like. For the courts of nobles, mostly the courts of the rulers and their vassals, originally formed a special kind of buildings, and naturally these were not influenced by the peasants' houses, in which one might naturally see the prototype of the city house, but they probably represent transfers from the seats of nobles as made known to us in the preceding Chapter. Such a mode of building could not influence the gathering citizens, who at first had small means at command.

Each one in the arising cities of the 11th century, who would pass as a citizen with full rights, must already be not only a free man, but also acquire his own building site, with which was connected the possession of a share in the landed

of the city. And we may assume, that this portion of the population had in any case created for itself a life of the 11th century. But of these buildings nothing has remained to us; the citizens' dwellings of these cities began for us only at a later time, in which the progressive development an equality had been established corresponding to that which existed in the 11th century.

Page 88. This is likewise entirely true for these cities, that in an earlier period of the founding of cities first only pointed as purely "market settlements", if they were not also sites in the use of pasture lands etc., as may be very generally proved, thus being at least by outside relations also closely connected with agriculture.

And the full citizens, there were quite early inhabitants of the cities to be mentioned: merchants and craftsmen especially, who did not as full citizens possess a share in the land and an entire farmstead in the city, but which as free men in the consideration of the requirements of agricultural business entirely disappeared; they were practically free in the development of their dwellings, only being bound by the power of custom to the national style of rural architecture.

Sometimes differently and indeed more originally did the cities arise at first in such cities, which without reference to important neighbors originated at a national place for trade, or were founded expressly by location during a campaign. In them substantially disappears that group of noble retainers and important retainers. First may be assumed for them solely uniform buildings for the house counts of the full citizens. As in the cities first described, there very soon also arose with their own building requirements. With the progressive found its advantages to belong to these societies, becoming

estates of the city. And we may assume, that this portion of the population had in any case created for itself arrangements for shelter, which corresponded to those usual in the peasant life of the 11 th century.⁹⁶ But of these buildings nothing has remained to us; the citizens' dwellings of these cities begin for us only at a later time, in which the progressive development an equality had been established corresponding to that already completed in the cities originating elsewhere.

Note 96. This is likewise entirely true for those cities, that in an earlier period of the founding of cities first originated as purely "market settlements." If they were not also furnished with farming lands, still they had ownership or rights in the use of pasture lands etc., as may be very generally proved, thus being at least by cattle raising also closely connected with agriculture.

Besides these two important classes of the people, the nobility and the full citizens, there were quite early inhabitants of the cities to be mentioned; merchants and craftsmen especially, who did not as full citizens possess a share in the land and an entire farmstead in the city, but which as free men lived on their own bit of ground, even if a small one. For them the consideration of the requirements of agricultural pursuits entirely disappeared; they were practically free in the development of their dwellings, only being bound by the power of custom to the national style of rural architecture.

Somewhat differently and indeed more uniformly did the citizens gather at first in such cities, which without reference to important neighbors originated at a natural place for traffic, or were founded expressly by location during a campaign. In them substantially disappears that group of noble masters and important retainers. First may be assumed for them tolerably uniform buildings for the house courts of the full citizens, in which the simpler workmen found shelter as tenants. As in the cities first described, there very soon also appeared there an independent class of free craftsmen and merchants with their own building requirements. With the progressing importance of the cities, then again so many of the nobility found it advantageous to belong to these societies, becoming

...they showed them how to be placed as "not
...and they were erected in the city their own houses,
...of the city was independent of its original mode
...of origin and contributed to the obliteration of the different
...ance in each city first described the important farm courts
...were mostly subdivided in later times, whether their owners
...of residing the enclosed value of the ground, or that in the
...of the city, the nobility
...were generally driven out of it. Of each of the old courts
...then at least the master's house, often merely a small house
...the old master's house of the village, often containing
...a mansion. Finally, from the merchant and craftsman class, and
...especially in the south, certain families frequently arose to
...important life, even corresponding to knightly rank. The res-
...houses of such patrician families then again composed a pecu-
...larly important class, but whose reconstruction frequently co-
...incided with that of the residences of the nobles.
27. Different kinds of City Dwellings.

...the residences of the important class, with which we have to
...of the "petty citizens", craftsmen, shop-keepers and
...residence houses even more varied. This resulted in a great
...from the very different development attained in the
...It is expressed not only in the
...to the ultimate end in the higher and lower residences in
...and commercial transactions, sometimes the ex-

so powerful. They allowed themselves to be received as "foreigners", and thus many erected in the city their own houses, but on account of the meantime occurring increased value of the ground in the city, this could no longer take the form of a noble's court, but became merely a stopping place. These later participations of the knightly class in the architectural treatment of the city was independent of its original mode of origin and contributed to the obliteration of the differences previously mentioned. Yet more was this then required, since in each city first described the important farm courts were mostly subdivided in later times, whether their owners willingly sold them in small lots as building sites, in order to realize the enhanced value of the ground, or that in the political contests for the mastery of the city, the nobility were generally driven out of it. Of each of the old courts then at best the master's house, often merely a small house like the last mentioned seats of the nobles, alone remained as a remnant. Finally from the merchant and craftsman class, and especially in the south, certain families frequently arose to important life, even corresponding to knightly rank. The residences of such patrician families then again composed a peculiarly important class, but whose representation frequently coincides with that of the residences of the nobles.

97. Different Kinds of City Dwellings.

Thus in the description of city architecture may we obtain a comprehensive representation only by the division of the city dwellings into several groups, and we select a division between the residences of the important class, with which we have to count also the buildings of the higher clergy, and the houses of the plainer citizen class, with which are easily joined the houses of the "petty citizens", craftsmen, shop-keepers and the like. Even with this separation into main groups the representation becomes ever more varied. This results in a great degree from the very different development attained in the separate countries. It is expressed not only in the adaptation to the climate and in the higher and lower requirements for the comfort of the house, but also brings with itself, that sometimes handwork and commerce predominates, sometimes the ex-

...and the reception of the ...
...the same time by the different countries, by which especially
...civilization penetrate into more distant regions by imitation
and produce mixed forms.

36. Basis of the Representation.

All these very complex conditions, through which the city
dwelling of the whole has passed, are still little in-
vestigated, and their basal tendencies have not yet been worked
out in a general survey. Even the collection of the vast dis-
persed material is still extremely delayed in comparison with
other provinces of the history of art. We give in the follow-
ing an attempt at a connected description, that is substantially
based on personal studies depending on the remaining monu-
ments of the different countries.

...that it corresponds to the actual occurrence in everything
...details, that may be made in such a first attempt to arrange
materials of unusual complexity, but with the firm conviction
that it corresponds to the actual occurrence in everything

Note 27. The reasons for these views were first published
in a lecture on the choice, collection and preservation of Ger-
man cities, houses, on the memorial days at Mainz, Sept. 27,
1904. See the stenographic report of the fifth day, for the
care of monuments, p. 86 et seq. Berlin, 1904.
a. Important City Residences.

38. Growth of Cities on the Sites of Roman Cities.
The destinies of the development of cities in Germany and a
also in other countries is connected with the localities, that
already played an important part in the Roman period. These
are needed at first only qualitatively, that have little signifi-
cance to the conditions of later times. All those sites of im-
portance, fields and wildernesses covered
and, Biedersteine etc.; gardens, fields and wildernesses covered

export and the reception of the crude products of agriculture and voyages, or that purely traffic and finance form the chief sources of revenue of the citizens, and all these essentially influence the plans of the houses. To these are also finally added the many interlaced influences exerted on each other at the same time by the different countries, by which especially the more highly developed forms from countries with an older civilization penetrate into more distant regions by imitation and produce mixed forms.

98. Basis of the Representation.

All these very complex conditions, through which the city dwelling of the middle ages has passed, are still little investigated, and their basal tendencies have not yet been worked out in a general survey. Even the collection of the vast dispersed material is still extremely delayed in comparison with other provinces of the history of art. We give in the following an attempt at a connected description, that is substantially based on personal opinions depending on the remaining monuments of the different countries.

We give them with the reservation of certain variations in details, that may be made in such a first attempt to arrange materials of unusual complexity, but with the firm conviction, that it corresponds to the actual occurrences in everything essential. ⁹⁷

Note 97. The reasons for these views were first published in a lecture on the choice, collection and preservation of German citizens' houses, on the memorial days at Mentz, Sept. 27, 1904. See the stenographic report of the fifth day, for the care of monuments. p. 86 et seq. Berlin. 1904.

a. Important City Residences.

99. Courts of Nobles on the Sites of Roman Cities.

The beginning of the development of cities in Germany and also in other countries is connected with the localities, that already played an important part in the Roman period. These are indeed at first only preliminary, that have little similarity to the conditions of later times. All those sites of former splendor lay desolate, like Cologne, Mentz, Worms, Strasburg, Regensburg etc.; gardens, fields and wildernesses covered

ion lay between the hereditary and the period of the medieval
 val Capeta. On the site of the late antique state buildings
 gold and silver vessels, decorated elsewhere for business and
 fortifications. When the first settlers again occupied the
 old city houses, all orders and arrangements were destroyed
 and forgotten, that provided for safety and peace in the city
 domain. The city walls, so far as they remained, were too ex-
 tensive to afford opportunity for a compact form of settlement.
 rather the restoration of the destroyed cities was so carried
 out in the 5th and 6th centuries, that important detached
 courts of the king, of a bishop or other great man, as well
 as certain villages groups of free peasants' courts were scatt-
 ered over the wide area. The former soon increased the found-
 ing of other courts by retainers, and their ennoblement with
 should also have no occasion for economy of space. Thus
 a substantial portion of such a growing city consisted of in-
 closed courts, that were distinguished in houses from the sur-
 roundings in the open country. So long as under the condi-
 tion of freedom of the people the judgment of associates re-
 sulted the preservation of law and order, there was no inducement
 afforded them for fortification; a reliance on a single enclo-
 sure wall sufficed to separate them from the open vicinity. It
 appears that in many cases the increasing power of this power
 law practice was early replaced by the state rule of royal
 officials, burgesses and city prefects, or by additional culti-
 ed ecclesiastical rulers, or that among the more important cit-
 ies of the group of many cities substantial unity prevailed,
 so that these cities were added the long periods of lawless-
 ness. It is concluded therefore, that the form of the urban
 cities court or the remains of such have often continued from
 the time of the fall of all power ensuring order, just as
 otherwise, a strife of each one against all, which led each
 these small possessors of power to fortify himself on his

the earlier area of the city. Even in Paris a great devastation lay between the Merovingian and the period of the mediaeval Capets. On the site of the late antique state buildings with colored glass windows, costly bronze grilles, canopies, gold and silver vessels, appeared shelters for distress and fortifications. When the first settlers again occupied the old city squares, all orders and arrangements were destroyed and forgotten, that provided for safety and peace in the city domain. The city walls, so far as they remained, were too extensive to afford opportunity for a compact form of settlement. Rather the restoration of the destroyed cities was so carried out in the 5th and 6th centuries, that important detached courts of the king, of a bishop or other great man, as well as perhaps village groups of free peasants' courts were scattered over the wide area. The former soon induced the founding of other courts by retainers, and their endowment with a ground area also gave no occasion for economy of space. Thus a substantial portion of such a growing city consisted of imposing courts, that were distinguished in no wise from the masters' seats in the open country. So long as under the condition of freedom of the people the judgment of associates upheld the preservation of law and order, there was no inducement afforded them for fortification; a palisade or a simple enclosing wall sufficed to separate them from the open vicinity. It appears that in many places the increasing power of this popular justice was early replaced by the stern rule of royal officials, burgraves and city prefects, or by ambitious cultured ecclesiastical rulers, or that among the more important owners of the ground of many cities substantial unity prevailed, so that these cities were spared the long periods of lawlessness, such as accompanied the political contests of the empire. We may at least conclude therefrom, that the form of the unfortified court or the remains of such have often continued from the first centres of mediaeval architectural development. But otherwise, after the fall of all power ensuring order, just among the nobles of the city arose the wildest struggle for supremacy, a strife of each one against all, which led each of these small possessors of power to fortify himself on his own

land, just as in a castle. The means for this was in partion-
lar the erection of lofty towers, that by the thick stone masonry of their walls and their dominance of the vicinity, they

the security to the possessor.

100. The Frankfort at Treves.

Thus the residence tower also appears in the city as one of the oldest remaining forms of the monumental dwelling. It is well known, now especially on Italian soil a real competition in the erection of such strong towers appeared, and it has determined the appearance of many cities to this day, for examples of such tower-like dwellings, that are to be regarded as the remains of great fortified courts. In Treves at the beginning of the 12th century existed an entire series; at least three are preserved to us in old drawings. Of one, the so-called Frankfort, the lower stories have remained to us, and we give in Figs. 104 to 108 a view of this perhaps oldest story and specimen of the beautiful details.

Fig. 104. Frankfort at Treves, the ground story at least two

Fig. 105. Frankfort at Treves, the first story at least two

There exists no certainty in regard to the date of the structure; men vary between accepting the 10th and the 12th centuries. On account of the very assured and strong form of the tower, the date of the construction is not to be doubted. It is in fact with the Monastery Church at Hersfeld in the middle of the 11th century an erection at earliest about the middle of the 11th century is most probable.

There originally rose above the ground story at least two stories, and the uppermost story was crowned by a series of battlements. The exterior is very carefully constructed with abundant means, faced on the surfaces with rectangular white stones, that were certainly taken from Roman ruins. Bold masonry and bold masonry with the windows that are bordered by great arches and the surfaces, that are bordered by great arches and the angles.

Fig. 106. Frankfort at Treves, the second story at least two

land, just as in a castle. The means for this was in particular the erection of lofty towers, that by the thick stone masonry of their walls and their dominance of the vicinity, then naturally not covered by houses, afforded the greatest possible security to the possessor.

100. The Frankenturm at Treves.

Thus the residence tower also appears in the city as one of the oldest remaining forms of the monumental dwelling. It is well known, how especially on Italian soil a real competition in the erection of such strong towers appeared, and it has determined the appearance of many cities to this day, for example, of Bologna. But also in Germany are known to us several examples of such tower-like dwellings, that are to be regarded as the remains of great fortified courts. In Treves at the beginning of the 19th century existed an entire series; at least three are preserved to us in old drawings.⁹⁹ Of one, the so-called Frankenturm, the lower stories have remained to us, and we give in Figs. 104 to 106⁹⁸ a view of this perhaps oldest city dwelling in Germany, as well as the plan of the second story and specimens of the beautiful details.

Note 98. From my own photograph.

Note 99. See Stephani. p. 512 et seq.

There exists no certainty in regard to the date of the structure; men vary between accepting the 10th and the 12th centuries. On account of the very assured and strong form treatment of the order of the upper window, which shows great affinity with the Monastery Church at Hersfeld in the mouldings, that an erection at earliest about the middle of the 11th century is most probable.

There originally rose above the ground story at least two stories, and the uppermost story was crowned by a series of battlements. The exterior is very carefully constructed with abundant means, faced on the surfaces with rectangular split stones, that were certainly taken from Roman ruins. Bold mouldings and belt courses with two courses each of Roman bricks subdivide the surfaces, that are bordered by great ashblars at the angles.

We have before us a building with simple plan, nothing more

than an imposing roof 43.8×23.8 ft. in dimensions, now with a high ground story, the upper story as represented, as well as the roof.

Note 100. It is to be noted, that the great entrance doorway of the ground story is a modern addition; formerly the ground story presented a solid wall.

The second story evidently formed the proper living room. It was lighted by small round-arched windows cut in a stone wall. On the front end wall was created a higher projection by two groups of covered windows with sturdy columns. At A is still visible the arrangement of a doorway; there must have existed an external stairway; at B are noted the remains of a flight of stairs. Thus the whole retains entirely its dimensions and arrangement the form of the wall, as we have learned to recognize it in the form of the wall. It is to be noted, that this high and narrow of the walls yet leads to the thought, that this high and narrow was perhaps not at all at first in the plan of the building. This could only be the result of a great court plan, entered to ourselves as in the right of a great court plan, surrounded by smaller dwellings, etc.

101. Residence Tower at Regensburg.

Of a different kind are the so-called war towers remaining in considerable number at Regensburg, even if they also are for the same purpose as the structure last described. The oldest and also the farthest is the great tower with which we are now concerned, and which is regarded by the people as a Roman work, bearing the name of the "Heather Tower."

The tower is a square in plan, and is built of stone. Above a cellar now filled with earth and a tunnel varied floor of very simple form and construction, but the tower is

than an imposing room 46.6×23.3 ft. in dimensions, now with a high ground story, the upper story as represented, as well as comprising a portion of the third story cut off obliquely by the roof.¹⁰⁰

Note 100. It is to be noted, that the great entrance doorway of the ground story is a modern addition; formerly the ground story presented a solid wall.

The second story evidently formed the proper living room. It was lighted by small round-arched windows cut in a stone slab, 4 on each longer side and 2 in the rear gable wall; only on the front end wall was created a richer treatment by two groups of coupled windows with stumpy columns. At A is still visible the arrangement of a doorway; there must have existed an external stairway; at B are noted the remains of a fireplace.

Thus the whole retains entirely in dimensions and arrangements the form of the hall, as we have learned to recognize it in rural noblemen's seats. It differs from these only by the strong extension upwards like a tower, whereby the small thickness of the walls yet leads to the thought, that this high superstructure was perhaps not at all at first in the plan of the building. Like these halls, the building must be represented to ourselves as in the midst of a great court plan, surrounded by smaller dwellings etc.

101. Residence Tower at Regensburg.

Of a different kind are the so-called war towers remaining in considerable number at Regensburg, even if they also served for the same purposes as the structure last described. One of the oldest and also the largest is the great tower with ashlar bosses, that stands behind the Cathedral and beside the ducal court on the corn market, and which is regarded by the people as a Roman work, bearing the name of the "Heathen Tower."¹⁰¹

Note 101. See Stephant. p. 411.

It is a great mass about 42.7 ft. square and 93.5 ft. high. Above a cellar now filled with earth and a tunnel vaulted lower story rise four additional stories about 32.8 ft. square inside, that served for living rooms, but are now subdivided by visibly later partition walls of the rudest kind. A fireplace of very simple form and construction, but therefore not

108. House of a Nobleman at Vierz.

without further indications of great age, is contained in the angle of the second story; the lighting of the rooms is very sparingly provided by three small windows in each story, that are in part divided by graceful little columns. The forms of these columns indicate with certainty the period of about 1150 to 1200 as the date of the erection of the tower.

We represent in Figs. 107 and 108 ¹⁰² an example from a later time in Regensburg, that is located in the complex of alleys southeast from the City Hall and in contrast to the strong defensiveness of that deficient ducal structure externally emphasizes rather the habitable impression.

The tower rises as an undiminished mass above a ground plan about 24.3×29.1 ft. and in contrast to the proper fortification towers, it already contains the most imposing room, spanned by ribbed vaults, in the ground story. We must there already assume sufficient openings for light, although the present wide shop opening, that seems like the show window for a tinner, far exceeds mediaeval requirements. We have correspondingly enlarged the plan and elevation. The tower contains 6 upper stories, that are internally entirely plain or even rudely treated, but on the other hand exhibit externally as a proud token of the wealth of the owner, graceful groups of windows on all four sides. In what manner the ancient stairways were arranged is no longer clear. It is certain, that the ground story was without any connection with the upper rooms, which corresponds to ancient tradition. From the fifth story upward, that is accessible by a doorway from the attic of the adjacent later house, there now leads upward a wooden stairway in two branches separated by a thin board partition. The upper series of battlements were not lacking in the ancient tradition of its use as a dwelling; we have also restored them here from other examples, and further added the roof, very probably to be assumed for German weather conditions.

Note 102. From my own drawing.

102. House of a Nobleman at Metz.

There is found in the Trinitarierstrasse in Metz the so-called Hotel S. Livier, a nobleman's residence of the 13th century, that no longer has the form of a tower, but which still

affords a certain defensibility. Its square base (Fig. 109) is small square tower rises at the left corner about two stories above this platform for defense.

Wells 108. The tower is situated in the middle of the front wall of the latest publication in W. Schmitz, Der Mittelaltliche Prozess in Lothringen (Dusseldorf, 1900), as well as on photographs of its present condition. For obtaining these photographs I am indebted to Mr. Secretary Winter in Berlin.

It is arranged internally as a dovecot, but besides these successful capacity, it might very well be utilized as a water tower. The tower is situated in the middle of the front wall.

can no longer be determined; but one may assume, that the position of the structure now used for a stairway below the angle turret formerly served the same purpose. To the defensibility

top of the house, the large openings of the front wall in each of the four stories forms an undesirable contrast. The two upper

and the lower windows are small and narrow, and the openings are

ve been well preserved to us. In both lower stories the design of window groups of like extent is attested, since their

blind trefoil arches have recently appeared beneath the arches co on the wall. The openings beneath these blind arches were

entirely destroyed in the 16th or 17th century for the arrangement of the larger windows with transom bars.

The tower is situated in the middle of the front wall, as in the example last described, and will serve the purpose of a water tower.

to be explained by this, that those structures occupied a place across a large court area. Then the lower stories would be

protected by the fortified enclosure of the court, and the defensibility of the latter was naturally increased by the arrangement of the defensive roofs of the buildings mentioned.

109. Nobleman's Court at Strasbourg.

The tower is situated in the middle of the front wall, as in the example last described, and will serve the purpose of a water tower.

but always are reflected the conditions in which the element

affords a certain defensibility. Its square mass (Fig. 109 103) is crowned by an entirely warlike series of battlements, and a small square tower rises at the left corner about two stories above this platform for defense.

Note 103. We give the elevation in a restoration based on the latest publication in W. Schmitz' Der Mittelalterliche Profanbau in Lothringen (Dusseldorf. 1900), as well as on photographs of its present condition. For obtaining these photographs I am indebted to Mr. Secretary Winter in Berlin.

It is arranged internally as a dovecot, but besides the peaceful capacity, it might very well be utilized as a watch tower in warlike times. The internal arrangement of the building can no longer be determined; but one may assume, that the portion of the structure now used for a stairway below the angle turret formerly served the same purpose. To the defensible top of the house, the large openings of the front wall in each of the four stories forms an undeniable contrast. The two upper stories possess triple rectangular grouped windows, that with their charming colonnades and graceful architectraves have been well preserved to us. In both lower stories the design of window groups of like extent is attested, since their blind trefoil arches have recently appeared beneath the stucco on the wall. The openings beneath these blind arches were entirely destroyed in the 16th or 17th century for the arrangement of the larger windows with transom bars.

The combination of lofty towers, -- as in Regensburg, or with defensive upper parts, as in the example last described, -- and with such free opening of important lower rooms, is only to be explained by this, that those structures occupied a place around a large court area. Then the lower stories would be protected by the fortified enclosure of the court, and the defensibility of the latter was naturally increased by the high defensive roofs of the buildings mentioned.

103. Nobleman's Court at Strasburg.

The examples already described allow us to recognize, that not alone the purpose of defense influenced their erection; but always are reflected the conditions in which the eminent owner must consider, to ensure his position in the city also,

even with arms in his hands. Another example will be contrasted with them, that informs us how the comfortable residence of an important man was planned in a city, in which under the strong rule of a bishop warlike turmoil was not to be expected. Fig. 110 ¹⁰⁴ gives the plan of the site of a court, that existed until the year 1903 at No. 10 Thomasplatz in Strasburg under the name of "Romerhof" (Roman Court), and so far as known to me, the only one of its kind in Germany, which gave a good representation of a city court of the Romanesque period, in spite of some additions or rebuilding of a later time.

Note 104. From my own drawing.

The piece of ground lies on the Thomasplatz and at the corner of a side alley with neighbors adjacent on two sides. At the rear angle, that perhaps earlier may have formed the middle of the whole, lay the master's house, a stately side structure about 82.0 × 45.9 ft. in dimensions. On the exterior appeared remains of a plain round-arched frieze, so that we still have to do with a structure of the Romanesque period; the internal architecture only still retained vestiges of a later mediaeval time and needs no further consideration. ^{Between} this main residence building and the side street extended a garden; adjoining the Thomasplatz were three story wooden galleries forming a connection with another dwelling of a later time, that occupied the front corner of the site. Aside from the buildings standing on the border, the whole was only enclosed by a simple garden wall and exhibited no arrangements for defense.

104. Abandonment of Fortifications within Cities.

We must assume that such plans designed for peaceful conditions in well governed cities soon became the rule. For it would be entirely erroneous to assume, that lawlessness and wild strife prevailed permanently in them. Warlike conditions might well appear therein, just as today, when the greater political or social transformations break through the usual order. But for ordinary times by the emperor's ban and the courts of the rulers or of the citizens, care was taken to severely suppress private war. Where fortified houses still existed in cities, the citizens labored zealously to get rid of them, and

already in the year 1180 as an expression of these conditions, the arrangement of new castles within the cities was generally forbidden by a decree of the imperial diet. Such unfortified important dwellings of the older time remain to us in great number, partly in existence and partly in drawings. As a rule they stand beside the streets and squares; but we cannot always assume this from the date of their origin. The present course of the streets cannot have determined their location; much rather may the streets have been arranged in their existing form to suit them, after the great court, whose chief buildings they once formed, had been divided and sold for building sites. That this procedure, the division of the larger areas of ground for sale as building lots for the inferior citizens actually occurred, there remains to us the evidence of documents, of which further below. If we represent to ourselves the important stone residences of the Romanesque period, that we know, as the centres of a larger nobleman's or patrician's court, we shall obtain for them an entirely different scale and also the explanation, why they are so open to the view, even in the ground story without any seclusion or any anterooms, as they must have been open to passage.

105. Templars' House in Cologne.

One of the proudest monuments of these conditions is the so-called "Templars' House" standing in the Rheinstrasse at Cologne, a building with a facade 49.2 ft. wide, whose facade we reproduce in Fig. 111 from Boisseree. It must have been the House of the patrician family of Overstolz, and judging from its form, it must date from the first half of the 13th century. Great openings are in the ground story¹⁰⁶ and do not permit the thought of the defense of such a house to occur at all. The two doorways at the right with the window lying between them correspond to an imposing hall in the lower story, that may be regarded as a reception room; on its left was a smaller room lighted by two windows with columns. Even the rear end of the house appears imposing and habitable with the rooms equipped with glazed stone windows, so that the ground story contains the most important and imposing rooms of the house.

Home 105. See Belvedere, 2. Dendroica dar. formica on Heder-
vicia. Pl. 25. Munich. 1858.

Home 106. Dendroica dar. formica on Heder-
vicia. Pl. 25. Munich. 1858. The house was situated on a hill, and the garden was very extensive. The house was built in 1858, and the garden was planted in 1859. The house was built in 1858, and the garden was planted in 1859. The house was built in 1858, and the garden was planted in 1859.

Concerning access to the lower story, no starting point is p
presented to us; we likewise are as little informed in regard
to the construction of the garden. The garden is situated on a hill, and the house was built in 1858, and the garden was planted in 1859. The house was built in 1858, and the garden was planted in 1859. The house was built in 1858, and the garden was planted in 1859.

the use of servants; in any case such a house afforded rooms
the home comfort of an important family.

107. Residence of the Provost of the foundation at Aix-
la-Chapelle.
The house was situated on a hill, and the garden was very extensive. The house was built in 1858, and the garden was planted in 1859. The house was built in 1858, and the garden was planted in 1859. The house was built in 1858, and the garden was planted in 1859.

Note 105. See Boisseree, S. *Denkmale der Baukunst am Niederrhein*. Pl. 35. Munch. 1833.

Note 106. Against the doubts of the existence of this building given by Boisseree very strongly appears the fact, that the rear wall of the ground story of the house is just as strongly opened by the certainly original windows given in detail in Figs. 810, 811, 812.

Concerning access to the upper story, no starting point is presented to us; we likewise are as little informed in regard to its subdivision. The treatment of the windows is also sufficiently expensive here, at least on the facade, to allow the thought of providing important living rooms there, although they do not equal the windows of the lower story in the careful treatment of forms. The stories in the attic may well have served for the commerce of the patrician owner, as also for the use of servants; in any case such a house afforded rooms enough both for the exhibition of rich magnificence and for the home comfort of an important family.

106. Residence of the Provost of the Foundation at Aix-la-Chapelle.

To similar requirements of such a house of a noble family of citizens naturally corresponded the dwelling of an important ecclesiastic, who had to represent externally the community placed under him. Such dwellings were often not placed among the houses of ordinary citizens, but frequently stood on the area left free around the more important churches, that as the freedom of the cathedral or foundation was not only secluded from the street traffic of the city, but was also excepted from the authority and justice of the municipality. We give as an example in Fig. 112 ¹⁰⁷ the so-called House of the Provost of the foundation at Aix-la-Chapelle, that may belong to about the same time as the House of Overstolz in Cologne. The exterior shows a tolerably expressive arrangement of windows with columns, in which it is certainly to be considered, that the windows of the lower story given in our illustration and likewise in the side view are free restorations. One could assume indeed smaller and plainer openings for lighting the probable storerooms and servants' rooms below. More probable

for the upper stories the arrangement of grouped windows in a part enclosed by round arches; yet one must indeed prefer for these a treatment, which takes more account of the habitable

rooms. The same is the case in the arrangement of the windows in the lower stories.

It is not only the arrangement of the windows in the lower stories of these grouped windows, the building contained in the (main) part with an elliptical window, but also the window (horse-chapel) and a similar subdivision in the upper story. Thus it corresponds tolerably well in its arrangement to what we have found in important secular residences of the same time; except that the space required for the numerous windows of the provost of the cathedral is reduced to a small ground area in consequence of the three stories of the building.

It is already commenced to become costly. For since the beginning of the 11th century the canons of the cathedral church had abandoned the earlier community life, and the separate houses of the canons had been built. The last time when the community lived in the area of the ancient "cloister court." That such an expenditure was made, and that the cloister court was built, is of the canons is indeed clear, and so is the connection quite conceivable, that this occurred in the time, when the cathedral building, in the person of the Hohenstaufen, Philip of Swabia, 107. House of the Count of Tyrol at Meran.

The House of Tyrol founded as a second place in Meran at the end of the 12th or beginning of the 13th century, and which by a mistake in its character is now generally designated as the "House of Tyrol" of the count of Tyrol. It is certainly a building of the 13th century, and which building is situated in the same place as the old cloister court. It is a building of the 13th century, and which building is situated in the same place as the old cloister court. It is a building of the 13th century, and which building is situated in the same place as the old cloister court.

for the upper stories the arrangement of grouped windows in part enclosed by round arches; yet one must indeed prefer for these a treatment, which takes more account of the habitable character of these rooms by the possibility of closing the windows.

Note 107. From Bock, F. Rheinlands Baudenkmale des Mittelalters. Cologne.

So far as one may judge the internal plan from the arrangement of these grouped windows, the building contained in the principal story a hall with an adjacent smaller room with bay window (house chapel ?) and a similar subdivision in the upper story. Thus it corresponds tolerably well in its subdivision to what we have found in important secular residences of the same time; except that the space required for the numerous followers of the provost of the cathedral is reduced to a small ground area in consequence of the three stories of the building, probably because on this ancient area of civilization space had already commenced to become costly. For since the beginning of the 11 th century the canons of the coronation church had abandoned the earlier community life, and the separate houses intended for them must have been located closely together on the area of the ancient "cloister court." That such an expensive building as here shown could not have been erected for each of the canons is indeed clear, and so is the conjecture quite acceptable, that this occurred in the time, when the foundation enjoyed a provost of unusual importance and extremely given to building, in the person of the Hohenstaufen, Philip of Swabia.

107. House of the Count of Tyrol at Meran.

Here also belongs the picturesquely grouped house, that the Counts of Tyrol founded as a stopping place in Meran at the end of the 15 th or beginning of the 16 th century, and which by a mistake in its character is now generally designated as the "castle" of the count of that country. It is certainly nothing more than a small and modest dwelling intended for temporary occupation, indeed imposing enclosed externally, but scarcely capable of defense against serious attack. It adjoins in irregular form (Fig. 113) a court with wooden porticos, whose adjacent enclosure with its narrow and low doorways is

certainly of modern origin.

In the ground story lie subordinate rooms. In the upper story here represented, from the small stairway vestibule one enters the chief apartment, furnished with a bay window, and which can be heated by a great stove, and with a servants' room beside it, further a wide passage on one side being the chapel bay (with separate sacristy), two other rooms adjoining on the other two sides. A third story then contained a number of smaller rooms for living. The house is entirely plain on the exterior and is only effective by the impressive outline of its roof; therefore the interior is richer and has an expression of great comfort. The internal partitions are entirely constructed of visible woodwork, and accordingly the external walls and ceilings are entirely wainscoted, the latter being subdivided by great beams. The elegant little vaults of the bay windows form a very refined contrast in form and color to the deep brownish red tones of the woodwork.

108. Compound Structures.

For the buildings previously described, we could only express the conjectures, that they were formerly parts of a larger court design. But from a later time are again preserved to us examples, by which we see, how the progressive need for richer treatment of the dwellings also entirely transformed the ancient city court design. This occurred in addition to the important residences in rural regions in a way, that on the reduced area the numerous rooms were comprised in connected buildings in several stories. For larger plans the requirements then increased, so that the necessary rooms could no longer be contained in a plain gabled structure. Entire wings were built, that either enclosed a court between them, or they were separated by a court from the everywhere already fixed city streets.

109. Hotel de la Tremoille in Paris.

In Paris was still standing in 1840 the Hotel de la Tremoille, a residence consisting of a ground story and two upper stories, executed in a magnificent architectural style,¹⁰⁸ which occupied about the middle of a narrow and irregular site between others, extending from Rue des Bourdonnais, where was the principal entrance, with a width of 72.2 ft. to the Rue Tirechappe.

Before the house, whose further fall in the bottle near Paris, re-cort, with porches on two sides, that were likewise with- ning the house extended beside the garden a wing also with por- destroyed, except a few fragments, that were placed in the fo- ole des Beaux Arts. We drive in fig. 114. 108 the view of the ies contained a considerable number of living rooms, grouped about a court D. The porches next the street are in two sto- ries; the rear wing built by the garden was but one story. and richness of the detail forms.

110. Hotel Clugny in Paris.

any built for himself in Paris. (fig. 115. 109). It also lies from notes and curiosity. Beside the main entrance lies on the left the little dwell- ground story by an open portico. That consists of a contin- as series of five separate rooms without a connecting corridor, able by separate winding stairways. An other portion adjoin- the house at the left rear angle, being the great cross vault- ed hall, which passes for the last remains of a Roman bath. on the whole pier of the lower hall by means of graceful cor- inosine and cheerful effect; only as a last reminiscence of

Before the house, whose builder fell in the battle near Pavia, and which was erected about the year 1490, extends a great fore-court, with porticos on two sides, that were likewise without windows next the street and supported an upper story. Behind the house extended beside the garden a wing also with porticos, and that contained the kitchen and other offices, having its exit toward Rue Tirechappe. The whole is unfortunately now destroyed, except a few fragments, that were placed in the Ecole des Beaux Arts. We give in Fig. 114 ¹⁰⁸ the plan of the ground story, and remark that the main building in three stories contained a considerable number of living rooms, grouped about a court D. The porticos next the street are in two stories; the rear wing built by the garden was but one story. Fig. 115 ¹⁰⁸ may give an approximate idea of the luxuriance and richness of the detail forms.

Note 108. See Viollet-le-Duc. Dictionnaire etc. fol. 6. p. 282.

110. Hotel Cluny in Paris.

An enclosed plan is shown by the almost contemporary and important stopping place, that the Abbot of the Monastery of Cluny built for himself in Paris. (Fig. 116 ¹⁰⁹). It also lies with the court next the street, thereby protecting the house from noise and curiosity.

Note 109. See the same. Vol. 6. p. 284 et seq.

Beside the main entrance lies on the left the little dwelling of the doorkeeper, only connected with the building in the ground story by an open portico. That consists of a continuous series of five separate rooms without a connecting corridor, to which are added other rooms in two short wings, made accessible by separate winding stairways. An older portion adjoins the house at the left rear angle, being the great cross vaulted hall, which passes for the last remains of a Roman baths. Next lies in the upper story the house chapel, whose apse rests on the middle pier of the lower hall by means of graceful corbelling. The external treatment is arranged for a plain, yet imposing and cheerful effect; only as a last reminiscence of the ancient feudal splendor is the effect of the stairway tower extending to the height of the ridge of the roof; it may e

express toward the street the thorough difference between such a house in comparison with the simple house of the citizen.

111. House of Jacques Coeur in Bourges.

Indeed the most magnificent of all mediaeval city residences was erected for himself after the year 1443 by the rich merchant Jacques Coeur at Bourges. For him, as a parvenu, the area of an ancient court was no longer at command, but he was compelled to purchase a suitable building site at the city wall, then of no importance. Two of its defensive towers were then included within the building (Fig. 117 110). Against them was placed the three story main building, following the bent course of the city wall; the three other sides of the court were enclosed by the low wings of the building. The latter substantially contained long galleries, that in ordinary times served to connect the different parts of the building and only exceptionally served for living purposes, together with the chapel over the main entrance with its small bell tower.

Note 110. From the same. p. 281.

The main building possesses in each story a middle hall, that occupies the space between the two octagonal staircase towers next the court. At one side in the ground story adjoin the kitchens with a separate court of the offices, above being the living rooms of the owner, there also being in each story a group of apartments separately accessible, that might serve for distinguished guests or for adult members of the family. All these rooms are characterized by the addition of numerous small side rooms and connecting corridors, similar to the subordinate rooms in the grand master's residence at Marienburg, that permit nearly all rooms to be reached without passing through the chief rooms, and which at the same time are beside the state apartments and permit the withdrawal into greater comfort. Here also is the external form treatment of the most splendid kind, suited as if to exhibit the wealth of the owner, as well as the skill of his architect in overcoming the numerous difficulties, that must result from the unsymmetrical and irregular plan of the completed whole. The piquant charm of the play of form developed here was scarcely excelled in the middle ages.

112. Ancient Court at Bamberg.

Such great wealth could also develop in France only in intimate connection with the unified royal power. It was not to be found in the more limited conditions of the German states. Indeed we yet have starting points for it in the great courts of important South German houses, that likewise there the frequently quite extensive requirements must be satisfied by large rooms.

The old court of the Prince Bishop of Bamberg offers a very characteristic example for the more modest conditions of Germany. The arrangement of the rooms is indeed similar to that of the last French residence. The whole (Fig. 118 ¹¹¹) encloses a broad court of irregular shape with low wings, in which a large number of rooms afforded shelter for the bishop and his attendants. But a half timber construction, almost to be termed similar to that of the peasants', occurs instead of the expensive and elegant stonework. Wooden galleries in the interior of the court connect the separate rooms and give to the whole a very picturesque expression. Also on the exterior is the main building constructed in plain half timber work, and only by its skilful and workmanlike jointing and the massive connected outlines of its great roof did it rise to a higher effect than its surroundings. (Fig. 119 ¹¹²). At the angle of the stone substructure are placed the arms of its owner, as well as the date of erection in 1479; otherwise the building lacks all ornament. And yet this was the residence of one of the richest princes of the church and the scene of a splendid court life. In its halls moved a luxurious life, for which Goethe has placed a poetical memorial in his *Götz von Berlichingen*; on such a plain background was set off the colored magnificence of the clothing, the rich decorations by armor and furniture, which in that gay time generally came into use with increasing wealth.

Note 111. From Hartung, H. Motive der mittelalterlichen B Baukunst in Deutschland. Berlin. 1899.

Note 112. From my own photograph.

113. Houses of Fugger and of Ehrlinger.

To a not much later time belong two well preserved houses of

pastorians, that may represent to us the greatest beauty of the city, is situated at the base of the hill, in the great internal commercial cities of south Germany in which were located the extended connections of the traffic of the world at that time. The magnificence of these cities is still evident in the houses of the citizens of Augsburg, Nuremberg, Strasbourg etc. are compared to royal palaces.

At the climax of all these designs properly placed the great House of Fugger in Augsburg. A luxurious and late Gothic portal and court enclosure, covered by very artistic ribbed vaults, form the last remains of once very famous splendour, also thoroughly rebuilt some years since. Even if not of equal importance as the Fugger, yet as capitalists the Thurners were likewise great in Ulm, who on the security of a loan of Charles V. in 1547, built the only German colony of the time, until Spanish jealousy also suppressed this beginning of a German endeavor for the East. The house of Thurner, which belongs to the transition to the Renaissance period, and is represented in the plans of the ground and second stories in Figs. 120 and 121. It lies free on two sides; on the third side adjoining a court surrounded by a wall, and on the fourth by a wall. The house is in direct connection with one street by a gateway, with the side of the main building, now indeed enclosed by inserted windows.

The house of Thurner, which belongs to the transition to the Renaissance period, and is represented in the plans of the ground and second stories in Figs. 120 and 121. It lies free on two sides; on the third side adjoining a court surrounded by a wall, and on the fourth by a wall. The house is in direct connection with one street by a gateway, with the side of the main building, now indeed enclosed by inserted windows.

patricians, that may represent to us the greatest height of city life, as attained at the close of the middle ages. It is in the great internal commercial cities of south Germany in which were located the extended connections of the traffic of the world at that time. The magnificence of those cities aroused astonishment also in foreign visitors, and spirited descriptions remain to us, in which the houses of the citizens of Augsburg, Nuremberg, Strasburg etc. are compared to royal palaces.

At the climax of all these designs properly stood the great House of Fugger in Augsburg. A luxurious and late Gothic portal and court enclosure, covered by very artistic ribbed vaults, form the last remains of once very famous splendor, also thoroughly rebuilt some years since. Even if not of equal importance as the Fuggers, yet as capitalists the Ehringers were likewise great in Ulm, who on the security of a loan of Charles V to Venezuela furnished the money, there settling and managing the only German colony of the time, until Spanish jealousy also suppressed this beginning of a German endeavor for ¹²⁹work beyond the ocean. Their house now contains the Gewerbe-museum (Museum of Crafts), already belongs to the transition to the Renaissance period, and is represented in the plans of the ground and second stories in Figs. 120 and 121 ¹¹³). It lies free on two sides; on the third side adjoins a court surrounded by wooden porticos, as well as a side wing. The court is in direct connection with one street by a gateway, with the other by means of a passage, that passes through near the middle of the main building, now indeed enclosed by inserted windows.

Note 113. From Gurlitt, G. Historische Städtebilder. Ulm. p. 16. Berlin.

Next it lies at one side a beautifully vaulted room, that partially receives light from a neighboring court and may have served as a wareroom or a large waiting room. Two smaller rooms for similar purposes are found at the other side of the street facade. In the rear wing on the court was formerly arranged a stairway, even if not in the great dimensions of the present one; behind it lie some smaller rooms, and beside them is a room, vaulted in three bays, that again may have been a

waterproof on a stable for horses. We find in the upper story
 otherwise closed connecting passages; in the extreme left corner
 or is placed a carriage house chapel, treated in the graceful
 form of the latest Gothic. Both this and the small rooms facing
 the street receive their light from a small closed all-
 ey. Thus and the fact, that also the main structure receives
 its light again in the upper story partially from the adjacent
 ground, remains the conclusion, that even at the erection of
 the house, the further adjacent area formed with it a greater
 court design.

The exterior is kept very plain; on the contrary the interior
 manifests the entire wealth of the owner in splendid stucco
 ornaments, joinery and paintings.

114. Lange House at Ulm.

On a smaller ground also rises the Lange House in Ulm, erected
 in 1875 (fig. 115). It has three on all sides like an
 important pattern's house, and it retains in the ground story
 by the old basal form of a house plan; from whose reception in
 the first story a series of smaller rooms in the basement
 present of the Renaissance period.

From the lower story the main entrance is reached
 hall, that is entered through a great portal. Adjoining it is
 a small vestibule with a staircase to the upper story and to
 the rear the entrance leads to the garden. The house is built
 on a hill and the small rooms in the basement are arranged in the
 upper story, broken into two flights of right angles, and the
 hall that leads to the garden is built in the corner.

That receives light from one side, on the other three being
 surrounded by high walls. The main part is the entrance hall
 at its plain form, but covered by rich ornamentation in Renaissance
 style.

As in the ground story is shown for smaller details and as
 in the upper story, these details of the very first story are
 similar to the main story, as we shall see in the description of the Lange house in Art. 115.

wareroom or a stable for horses. We find in the upper story that the main building is divided into four rooms without a connecting corridor; over the porticos of the court extend lengthwise closed connecting passages; in the extreme left corner is placed a charming house chapel, treated in the graceful forms of the latest Gothic. Both this and the small rooms behind the stairway receive their light from a small closed alley. This and the fact, that also the main structure receives its light again in the upper story partially from the adjacent ground, permits the conclusion, that even at the erection of the house, the further adjacent area formed with it a greater court design.

The exterior is kept very plain; on the contrary the internal architecture, that indeed belongs to the later Renaissance, manifests the entire wealth of the owner in splendid stucco ceilings, joinery and paintings.

114. Laube House at Ulm.

On a simpler ground plan rises the Laube House in Ulm, erected in 1573 (Fig. 122 ¹¹³). It lies free on all sides like an important patrician's house, and it retains in the ground story the old basal form of a house plan; from whose reception hall are divided a series of separate rooms in the monumental treatment of the Renaissance period.

Four cross vaults without ribs cover the imposing entrance hall, that is entered through a great portal. Adjoining it is a broad longitudinal hall extending to the garden side of the house; the remaining ground area is divided into separate rooms. From the hall ascends the beautiful stone stairway to the upper story, broken into two flights at right angles, and it ends there free in the middle of a richly treated anteroom, that receives light from one side, on the other three being surrounded by living rooms. Likewise here is the exterior kept in plain forms, but covered by rich ornamentation in painting and sgraffito.

As in the houses built in blocks for wealthy citizens and to be described later, these designs of the very great masters of commerce also found their successes, as we shall have opportunity to see in the description of the Schad House in Art. 154.

115. Important Houses of less Extent.

But the nobility not only together with the patricians, who partly came from it, formed the highest class of the great city land owners. After the power of the city community had become so great, that it formed a certain counterpoise to the likewise rapidly increasing power of the ruler of the country, it appeared advisable to many of the nobility to rely on such a strength. And as a rule the cities were favorably inclined to receive noblemen as "strangers" with the obligations to armed service for their civic rights; thereby they obtained valuable connections in the country and leaders skilled in war for their troop of citizens or of mercenary soldiers.

Partly this drawing together of both classes and also partly merely the incitement to take part in the animated course of city life, led many nobles to create small stopping places for temporary occupation in the richer cities. There were naturally smaller requirements to be satisfied than for a permanent court; also the entire kind of a structure was usually strongly influenced, since as a rule no isolated building site could be procured, and therefore one must add to the series of existing better houses of the citizens. In this manner originated at less cost buildings of extremely simple ground plan, in which in a characteristic way the oldest German type of house, that with one room, at least in the ground story, again continued until in the latest mediaeval period.

116. Important House in Strasburg.

Fig. 123 ¹¹⁴ gives the plan of a ground story of such a small house of the year 1529 standing on the Broglieplatz in Strasburg, that is characterized as an important house by an elegant late Gothic bay window on the street facade, and on the court side by a rich treatment of the windows, doorways and the small winding stairway, but otherwise has been greatly changed externally. In the ground story is indeed now separated a narrow and long corridor, that in a very awkward way affords passage through the court to the stairway. But originally the entire lower story certainly formed a great single room, that represented the imposing reception room of the owner.

Note 114. From my own drawing.

117. House of a Nobleman at Schwabisch-Hall.

Assuredly proved ~~is~~ such a plan in the second story mentioned above (Fig. 124 ¹¹⁴), a house that served for one of the noble families living in the anciently famous city of Schwabisch-Hall on account of its cheerful life. It lies in the "upper nobles' alley (Herrengasse) and even dates from the Gothic period, as proved by the richly treated window stories of the rear facade, but it certainly was rebuilt in the Renaissance period, and experienced an extension not represented here, from which come the richly decorated portal and the ogee gable of the facade. The ground story of this building is also now divided by a partition; but its battened ceiling extends over all these parts and still rests on Gothic middle posts, showing the original unity of this entire room in the ground story.

How the upper stories of these small houses were treated can no longer be determined. For the first example we must conjecture a large rear hall and rooms cut off toward the front. For the House from Schwabisch-Hall may be assumed, from the location of the stairway, an anteroom at the front corner on the right, adjoining which were two small or one larger room at the elevated rear with a good outlook, with another room next the street.

118. Houses at Rothenburg -o-T, Wismar etc.

Houses of this simple ground form with a large hall with a middle post, if necessary, are found abundantly in German cities. In the Herrengasse at Rothenburg-o-T, where the nobles originally settled in the vicinity of the ancient imperial castle, they lie together in large numbers, indeed exhibiting greater dimensions as well as a different destination of the ground story. Men were then not accustomed to add it to the living rooms, for which sufficient space existed in the upper story; the hall is so spacious, that made accessible by doorways, it could serve as a shelter for traveling carriages and the horses of guests, at least at that time a very desirable space for the important housekeeping of the time. Likewise the houses of ecclesiastical lords generally took similar forms. As an example may be mentioned the old Pastor's House of the Church of S. Maria in Wismar. This similarity is easily intell-

intelligible, since for both kinds of houses the existing re-
quired a little more space, which was not to be had.
The house was built in 1890, and was the first of its kind
in the district. It was built in the style of the
cottages (see below), but in individual cases it frequently
differed in detail. At first there were only small cottages,
but later on the houses of this kind became larger and
in their buildings.

119. Rabe House in Rottendorf-O-T.

The Rabe House is a fine example of the style of the
originally developed form of such an important reception hall, as
usually resulted from the very small space which was at the
disposal of the architect. The Rabe House at No. 9 Rottendorf
the ground story is nearly square, the upper story being
at the side. In the upper story two interesting partitions
into 4 rooms, that next the stairway serving as an entrance,
and the other two as living rooms. (See also p. 116.)

Note 119. See Bau- und Kunstschreiber im Grossherzogtum
Bremen. Provinz Osnabrück. Kreis Emden. p. 75 et seq.

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and the other two as living rooms. (See also p. 116.)

intelligible, since for both kinds of houses was similarly required a single great reception room, without side rooms being necessary for mercantile use or workshops. Otherwise such houses seem so strongly those of the well to do merchant class of citizens (see below), that in individual cases it frequently cannot be decided of what class were their ancient occupants.

132 The later complete fusion of both classes clearly appears now in their buildings.

119. Rabe House in Rothenburg-o-T.

In Rothenburg-o-T is also found an example of the architecturally developed form of such an important reception hall, as easily resulted from the more nearly square ground area of the building site. The Rabe House at No. 9 Kirschgasse forms in the ground story a nearly square hall, gracefully covered by 4 star vaults on a slender middle support. A stairway adjoins at the side. In the upper story two intersecting partitions correspond to the transverse arches below and divide the whole into 4 rooms, that next the stairway serving as an anteroom, one as a kitchen and the other two as living rooms. (Figs. 125, 126 115).

Note 115. See Bau- und Kunstdenkmäler im Grossherzogtum Hessen. Provinz Oberhessen. Kreis Bidingen. p. 75 et seq. Darmstadt. 1890.

120. Schlüsselfelder House at Nuremberg.

Somewhat similar in dimensions is the Schlüsselfelder House in Nuremberg, built between 1431 and 1437, in the possession of that family until it died out, and now remaining for future time in the ownership of the Schlüsselfelder Foundation, established with the property of the deceased family. It is popularly known under the name of the "Nassau House." Although this name already occurred in the year 1600, it does not belong to the house, as conclusively proved by Mummenhof. Until 1442 it rather belonged to the Nuremberg patrician Ulrich Ortlieb, who was closely connected with King Sigismund in financial affairs, and by this relation indeed obtained the right to place the Bohemian lion (in which men long believed that they recognized the arms of Nassau) on the splendid upper story of his house beside the arms of the emperor and of the elector. The plan forms a simple rectangle; how the internal subdivision

was originally arranged, particularly how the stairway was constructed, can no longer be determined; the chief value of the building lies in its treatment by beautiful forms, the elegant bay window and rich battlement cornice, true masterpieces of high Gothic architecture. (Fig. 127). In spite of the battlements we may see in the house not a "donjon" capable of defense; for to build such would have had no purpose in the 15 th century in the well governed city of Nuremberg, nor would it have been permitted by the city council. For the citizen class after the 13 th century always jealously watched, that no new castles should be erected within the cities. Such warlike suggestive forms are here to be understood as merley knightly and court decorations, by which the wealthy owner liked to manifest his intimate relations with an important class. Therefore we hold it probable, that all the stories served for living rooms, and conjecture that in accordance with the previously described examples, in the lowest was found a reception hall, over which were small living rooms. In the third story then followed the festal hall with its beautiful bay window, which did not necessarily indicate a chapel, like many others, but indeed may have served for the secular purpose of a convenient outlook.

121. Stone House at Büdingen.

The previously mentioned examples were placed in the series of citizens' houses, which naturally formed the rule for such temporary stopping places of important nobles. But occasionally open places were yet found indeed within the city, particularly since in the now peaceful times, men no longer placed the same value as formerly on the accessibility of the walls of the fortifications. Thus the so-called "Stone House" was so built on the "Mühlpforte" at Büdingen (Figs. 128, 129¹¹⁶), that its rear end wall stands on the city wall, and that a part of the open space originally intended for the defense of the wall could be assigned to it for a court area. We are unusually well informed in regard to its origin and purpose; for it was first mentioned about the year 1518 as "the new house", that Count Ludwig II of Isenberg-Büdingen had erected for his third son in the year 1500 (or 1510).

Note 116. See Barker, p. Die Bau- und Kunstgeschichte des
 des. Einiges über die Bau- und Kunstgeschichte des
 1888 - 1889. 1888.
 The tower of the church is a very interesting one, and is
 at present in a very good state of repair, and is
 originally contained a single bell in the ground story. The up-
 per stories are now variously subdivided by later walls; from
 the ground story we have the plan of the tower, and in
 of which is contained the large tower, which is a very
 tall as a single bell tower. The tower is a very
 single bay window and plain stepped gable, the exterior still
 shows a certain amount of the original structure, and
 the tower is a very interesting one, and is a very
 good story leading from the bay window to the stairway tower
 has been entirely removed.

122. Hilchen House at Doron.

As a last example of this kind may be mentioned the built
 by the great soldier Johann Hilchen in Doron - 1548-50. In 1548-50,
 according to an inscription. In the treatment of form it is
 a transition to the antique and style of the Renaissance peri-
 od and also to the style of the Renaissance period.
 a visible advance from the earlier buildings, one to
 the influence of the widely traveled owner.
 The lower story with its beautifully vaulted rooms must have
 served as a stable for horses. We find in each of the two up-
 per stories (fig. 120) a great hall and also an important
 living room with two rooms. A small room with two rooms
 and still the kitchen (fig. 121) and at the rear the lower
 transition to the kitchen projecting in the rear and covered
 by a small vault. The tower is in the rear and is a
 of two stories with two rooms. The tower is a very
 by a single wall. The tower is a very interesting one, and is
 the two-story bay window of the hall, as well as by the fall-
 in addition to the bay window and the tower is a very
 of the tower. The tower is a very interesting one, and is
 of the tower. The tower is a very interesting one, and is
 of the tower. The tower is a very interesting one, and is

Note 116. See Latham, F. Die Bau- und Kunstdenkmäler des Reg. Bezirks Wiesbaden. I. Der Rheingau. p. 120 et seq. Frankfurt - o - M. 1902.

The ground plan of the house substantially forms an irregular rectangle with an adjacent small stairway tower, and it originally contained a single hall in the ground story. The upper stories are now variously subdivided by later walls; from the source mentioned we give the plan of the second story, that originally contained two large rooms, anteroom and hall, as well as a small bay window room. With its refined and elegant angle bay window and plain stepped gable, the exterior still makes a stately impression in spite of partially destroyed stone mullions, and a traceried gallery at the height of the second story leading from the bay window to the stairway tower has been entirely removed.

122. Hilchen House at Lorch.

As a last example of this kind may be mentioned that built by the great soldier Johann Hilchen in Lorsch -o-Rh. in 1546-8, according to an inscription. In the treatment of forms it is a transition to the antique art style of the Renaissance period and also presents in the internal arrangement of the rooms a visible advance from the similar earlier buildings, due to the influence of the widely traveled owner.

The lower story with its beautifully vaulted rooms must have served as a stable for horses. We find in each of the two upper stories (Fig. 130 ¹¹⁷) a great hall and also an important living room next the street. A corridor connects both apartments with the winding stairway and at the same time forms the transition to the kitchen projecting in the rear and covered by a tunnel vault. Beside this lies in the ground story another room covered by two cross vaults, now divided into two parts by a later wall, that Luthmer conjectures to have been the house chapel.(?). The exterior receives its chief ornament by the two-story bay window of the hall, as well as by the gallery extending about it in the second story and adorned by rich coats of arms. The great gable entirely spanning the wider side of the house was only erected two and a half centuries after the death of the field marshal in the year 1574.

Note 117. See Luthmer, F. Die Bau- und Kunstdenkmäler des Reg. Bez. Wiesbaden. I. Der Rheingau. p. 120 et seq. Frankfurt -o-M. 1902.

The idea of the predominating hall building or of the single reception hall has been entirely abandoned here. As in the treatment of forms, so also in the arrangement of the ground plan, the house forms the transition to the mode of living of the period succeeding the middle ages.

b. Citizens' Houses in Blocks.

123. True Basis of Citizens' Houses in the oldest Cities.

The vassals or officers of the ruler of the city, from which came the city nobility, appear in the earliest history of many cities as influential rulers in the first place; yet they and their houses, that we have endeavored to represent in the preceding, were still always in the minority in comparison with those of the simple and plain citizens, in which the independent new strength of the city early found its supporters. This class of the city inhabitants was it, which in the Rhenish bishops' cities first made German conditions prominent, frequently in strong opposition and resistance to the feudal basis of the mediaeval state. In the conditions of these first successful city communities shall we accordingly have to seek also the earliest basis for the development of the citizen's house. Whether by the great commotions and heavy losses, that the political struggles of the 11 th and 12 th centuries brought with them, trade and industry suffered most, or whether they were rather thereby goaded on to greater development, would be difficult to decide. But it is certain, that after the ending of this period of contests, the cities derived their strength from these two sources of profit far more than before, and that for many citizens agriculture, the earlier sole basis for a livelihood for the free man, passed into the background in comparison with them. From this change in the mode of living must naturally result the change from the city farmstead to the true citizen's house, that everywhere occurred with the increase of commerce and industry. But for the course of this transformation a further change in the conditions of ownership was of essential importance, developing from the fact, that

fresh masses of people pressed into the parts of the city with good outlooks. Until then but a small portion of the area of the city was occupied by houses; the larger portion was used for agricultural purposes, as shown by the view of Brunswick in a successful restoration, given in the plate adjoining page 67. Then these landed estates, partly belonging to important owners, partly to ecclesiastical associations, were subdivided and sold as actual possessions to the newly arriving occupants. For this was often employed the form of hereditary rental. By this the purchaser had to pay ground rent, could also sell the house built by him, but the owner of the ground possessed a preemption right, and also if he wished to sell his ground. In this manner the wide areas rapidly disappeared, within which one might extend as he preferred; the ground and soil rapidly rose in value within the walls enclosing the city, exactly corresponding to modern ways, and soon house adjoined house very closely. The limitation of space afterwards formed an important condition for the forms of the citizens' dwellings.

124. Conditions of the Building Sites of later Cities.

These procedures in the oldest German cities were also further repeated by force of similar conditions in the cities founded later. From the beginning onwards were the conditions of ownership arranged likewise. It formed the rule, that on the founding of a city then the lots in similar and regularly shaped courts of tolerably imposing dimensions were given to the settlers. The dimensions of these court lots have been frequently transmitted to us; they were pretty uniform throughout Germany, and for about 100 ft. in depth vary between 50 to 72 ft. in width. To this was then added for the living of the new citizen a sufficient equipment of arable land, meadow rights, etc. Thus such a newly founded city was composed of farmsteads first, and the practice of agriculture occupied a substantial place in their activity besides manufacturing and market rights. Substantially similar conditions resulted from the first, where cities were founded in the form of purely "market settlements," in which case each settler received only a house lot with a share in the common, but without any farm

land. The magnitudes of these are characteristically determined like those of the agricultural citizens. But also these by subdivision and sale regularly were diminished in size, so that generally the house of the actual citizen stood, not on the areas mentioned above, but on a much smaller space. And indeed the dimensions are very unequal, that we shall sometimes see shrink to very small size. Besides the differing areas then the very diverse living conditions of the various cities frequently exerted an influence upon the development of the forms of citizens' houses in the sense of a frequently conforming diversity. For naturally must the treatment of the dwellings proceed according to the very differing progress of the city development. Where a city permanently remained on the standpoint of the time of its foundation, and also where the agricultural citizens, with some trades and traffic carried on at the same time, became the chief source of income, must result a greater regularity of form of the house, as well as a more intimate and permanent connection with the peasant's mode of living in the vicinity. Likewise the city plan in the simple course of the streets there frequently took the ancient and nearly a village form of courts arranged around a market place or along a long street. Such cities or villages, whose importance did not extend beyond the immediate vicinity, are found in all regions of Germany in great numbers; it is only questionable, whether we must place these dwellings generally among the examples of proper citizens' houses, or whether they should not rather be counted with the peasants' houses, since their former occupants were chiefly of the peasant class.

125. Differing Requirements of the separate Classes of the People and of the Vicinity.

Substantially otherwise was developed the mode of life in those cities, that understood by increased industrial activity and extended commerce how to win a more important position. They were first of all the locations of the previously described settlements of nobles; there the enhanced industry of the citizens produced a greater diversity among the classes of the population and of the dwellings belonging to them. Likewise in them the practice of agriculture long played an important

part; but it is still characteristic for the most important cities of the rank of Frankfort, Nuremberg, Basle etc., that their industries were more and more by political reasons driven into the outer wards of the cities. As the last remnant of the ancient use of the court chiefly remained the raising of swine, carried on within the house, which was generally first forbidden in the 17 th century in even the most developed cities, while in the smaller ones (Bremen, Berlin etc.) men limited themselves to forbidding the freedom of the boars, or at least only permitted this at certain hours of the day.

Besides the houses of the agricultural citizens, or soon in their places appear the special houses of the merchants and of the mechanics, as the chief representatives of the citizen class. Toward the close of the middle ages there were added the dwellings of the numerous increasingly wealthy officials and of the members of the learned professions, notaries, physicians, etc. Indeed the gradually increasing free immigration of the population of the city, led after the 15 th century, at least in many cities in middle and southern Germany, already to the erection of houses, which were arranged for rental for longer or shorter periods, and to afford shelter for those not desiring to settle in the city. Thus arose already a rich graduated series of citizens' dwellings for the mere purposes of houses for mechanics, merchants etc., and therefore that the diversity of the customs of living and the local conditions also produced very different forms. Thus particularly in northern Germany, that in part was recently opened to Christian civilization, and indeed in part was so first opened during the time to be described here, the living conditions of the more important citizens were all reduced to a simpler and ruder nature, than on the older field of civilization in the south. To this was added, in opposition to a general and popular opinion, that the middle ages were entirely a period of the freest development, and by its gushing life force, scorning all rules, in the formation of all conditions, ever surprising by the multiplicity of all possible solutions for the same cases. This had as a result, that also the different ground forms of buildings were frequently mingled together, that the influence of

more developed regions widely affected other provinces, and that thus an almost unbounded abundance of separate phenomena appear to the observer.

126. Subdivision of the Material.

137 We shall attempt to obtain as correct as possible a survey of the fluctuations of this polyform development, only when we produce for comparison characteristic examples of the aforesaid ground forms. There will it serve the aim of clearness of representation, if we adhere in details less strictly to sequence in time than to the sequence of simpler and of more developed forms of houses. Likewise the occasional passing outside the period of time indicated by the title of this Heft will not be avoided, if it be thereby made possible to add good examples from the somewhat later period of the German Renaissance, for making apparent the mediaeval customs then continued. This also has historically its good reasons, in that the progress of civilization in the different regions then proceeded very irregularly, so that high development in the one and simple conditions in the other occurred at the same time. A presentation in chronological sequence would therefore afford a view of the greatest confusion instead of an actually occurring and successive development. A survey of the main outlines of this development will then of itself result from the sequence of the examples to be presented.

Merely logically and historically would it be most attractive to commence the survey with the oldest houses of the agricultural citizens, from which must have been developed the latter forms. But this is impossible for the simple reason, that of these older houses nothing has remained to us. May one explain this fact by saying, that these shelters were of too slight a kind to last for the time, or that later customs no longer corresponded to them, and they accordingly disappeared; it is correct in any case, that we have no knowledge of them based on the monuments. But the later house of the agricultural citizen cannot be taken as a starting point of the presentation, as we shall see below.

Therefore we shall so proceed, that we shall gradually pass from the simplest forms of the dwelling to those most developed.

then without land and corn" was alone determinative.
187. Houses of the lower citizens.

The simplest form of such dwellings is naturally presented by the houses of the lower citizens. If these desired to live as free persons in the city, according to medieval ideas, they must live on their own soil and have their own house built "their own smoke." And the citizens found their advantage in favoring the settlement of the lesser citizens; for these were the laborers who were necessary to maintain the continual market in permanent booths, and to contrast to the yearly or weekly market of the small cities and villages even formed the characteristic of the more highly developed industries of the city. Thus for these less well-to-do settlers, who could not purchase an entire court side with the rights of a full citizen, occasionally had already been offered early for the acquisition of a smaller building and site, who partly larger properties of single owners or of religious institutions. The acquisition of such property for such purposes by the community on account of the at first previously mentioned form of ground lease was certainly proper. It was for the sake of these settlers, whose conditions were naturally improved by right of the city walls, that before were in condition for the undertaking of a permanent

188. Church.

Walls. 181 and 182 afford a representation of such a house for a mechanic or small citizen from in Lübeck. Characteristic for the entire species are the dimensions: 12.9 ft. wide and 11.1 ft. high for the main house, and 11.1 ft. high for the side house. The main house is about 12.5 ft. for the ground story.

That the combination of a citizen's life with agriculture brings with it an increase of the requirements for the house plan is clear, and so we commence the representation with those houses, for whose planning the industrial occupations of the "citizen without land and corn" was alone determinative.

127. Houses of the lower Citizens.

The simplest form of such dwellings is naturally presented by the houses of those less wealthy, whom we may comprise under the name of the "lesser citizens." If these desired to live as free persons in the city, according to mediaeval ideas, they must live on their own soil and have their own house hearth, "their own smoke." And the citizens found their advantage in favoring the settlement of the lesser citizens; for these served by their industry as mechanics and shopmen for the animated traffic of the city in a high degree. They alone made it possible to maintain the continual market in permanent booths, that in contrast to the yearly or weekly market of the small cities and villages even formed the characteristic of the more highly developed industries of the city. Thus for these less well to do settlers, who could not purchase an entire court site with the rights of a full citizen, opportunity had already been offered early for the acquisition of a smaller building site, when partly larger properties of single owners or of religious societies were subdivided, partly also freely given for such purposes by the community on account of the at first still abundant unbuilt areas in the interior of the city. The previously mentioned form of ground lease was certainly properly created for the means of these settlers, whose possessions substantially consisted of their industry and skill, that therefore were in condition for the undertaking of a permanent rent, but not for the payment of a large purchase price.

138 128. Lübeck.

Figs. 131 and 132 ¹¹⁸ afford a representation of such a house for a mechanic or small citizen from in Lübeck. Characteristic for the entire species are the dimensions; 12.9 ft. wide and 32.5 ft. deep for the entire house, adjoining which is a small court at the rear. ¹¹⁹ The heights of the stories are also quite small. They are about 12.5 ft. for the ground story, 6.56 ft. in both upper stories to the under sides of the beams,

Not a student of the school.

however. An example of such a kind, of little importance geologically, that I found on the Gravel in Hunter-1-7, has in the ground story a clear width of 9.2 ft. by a depth of 17.1

only 7.8 ft. deep

to which is added about 9.8 inches to the single boarding with battened joints forming the ceiling.

Note 118. From my own drawing.

Note 119. These are not the least dimensions of such little houses. An example of such a kind, of little importance architecturally, that I found on the Dräbbel in Munster-i-N, has in the ground story a clear width of 9.2 ft. by a depth of 17.1 ft. Above this rose three stories; behind was a small court only 7.2 ft. deep!

In spite of the small total dimensions, the little house contains quite a number of separate rooms. In the ground story one first enters a hall or workshop, from which the stairway ascends; behind is also a room, usable as a room for writing, for the master or for storage. We find in the upper story a division into three rooms. The middle room also contains the narrow stairway winding around a central post, and has the house hearth. In front is a living room separated by a half timber partition, behind it being another small room with a wooden partition. The exterior is plain and in the latest form of the north German brick architecture, but is quite carefully built.

129. Colmar, Breslau etc.; France.

The ground form here given is important, since it was followed in all German lands and even far outside them. Figs. 133 and 134 ¹¹⁸, 135 and 136 ¹²⁰ give further examples of similar ground plans from cities as far apart as Colmar and Breslau; the last is but little changed by the arrangement of a small salesroom and of a corridor leading to the court. Quite similar plans are known to us, only to mention certain examples in the east and north at Danzig and Königsberg, Rostock, Hildesheim, Lüneberg, in middle Germany in Thuringia (Neustadt-o-Orla etc.), in the Rhenish cities of Cologne, Coblenz, Mentz etc., in Miltenberg and Kitzingen-o-M. In the south the type passes through Strasburg and Basle far into Switzerland.

Note 120. From Gurlitt, G. Historischer Städtebilder. Breslau. Berlin.

The location of these little houses in the city plan is very variable; sometimes they stand in rows beside each other in g

great numbers, where we may then assume the uniform quality of large ground areas. Sometimes they are also built up by the larger houses; the latter is to be explained by the fact that occasionally certain larger owners of land have sold to new settlers portions of their ground, such as a road leading to the house, or a small portion of a large estate.

Characteristic for all these little houses is the triple room, only indirectly lighted through the house. The distance in width are tolerably uniform and from 8.8 to 12.4 ft.; the depth varies to a greater degree according to the form of the site, up to 35.3 ft. as the greatest. Very much rarer in Germany are houses, that consist of but two rooms in depth; a front room and a deep rear hall, the latter receiving the sun- and the house light. But they are found in widely scattered places, as in Pilsen and in Bonn (see also the house of the Jewish Teacher in the Judenassess) and indeed in the earlier form of the same structural idea, sooner for the direct lighting of the hearth place. Thus then also occurs the ground plan of the house of a small citizen in France.

Viollet-le-Duc collects examples from the little city of Moulins (Duchy of Guienne) founded in the year 1275 and from Laval, and Verrier similar ones from Olney and other cities, that in magnitude and subdivision almost entirely agree with the German buildings. This astonishing similarity can be no accident; it depends upon this, that the social position and the living conditions of the class of mechanics were everywhere substantially the same, and they were possible, like the modern rented barracks, since they satisfied the usual needs, an easy change of property and thereby a tolerably free movement of the honest city population. We are justified in seeing in these small houses the typical mode of living for the entire lower class of citizens. Aside from the low heights of the stories, which are made entirely too small for our sanitary requirements, the mode of living by the subdivision into different rooms. Of substantial importance for the lower class

great numbers, where we may then assume the uniform subdivision of large ground areas. Sometimes they are also built separately between larger houses; the latter is to be explained by that occasionally certain larger owners of land have sold to new settlers portions of their ground, such as a road leading to the rear court, as a useless remnant of a former agricultural pursuit.

139 Characteristic for all these little houses is the triple subdivision in depth and the location of the hearth in the middle room, only indirectly lighted through the house. The dimensions in width are tolerably uniform and from 9.8 to 16.4 ft.; the depth varies to a greater degree according to the form of the site, up to 65.6 ft. as the greatest. Very much rarer in Germany are houses, that consist of but two rooms in depth; a front room and a deep rear hall, the latter receiving the stairway and the house hearth. But they are found in widely removed places, as in Pilsen and in Rothenberg-o-T (the so-called House of the Jewish Teacher in the Judengasse) and indeed indicate an earlier form of the same structural idea, sounder for the direct lighting of the hearth place. Thus then also occurs the ground plan of the house of a small citizen in France. Viollet-le-Duc ¹²¹ collects examples from the little city of Monpaziers (Duchy of Guienne) founded in the year 1284 and from Laval; and Verdier similar ones from Cluny and other cities, that in magnitude and subdivision almost entirely agree with the German buildings. This astonishing similarity can be no accident; it depends upon this, that the social position and the living conditions of the class of mechanics were everywhere substantially the same, and they made possible, like the modern rented barracks, since they satisfied the usual needs, an easy change of property and thereby a tolerably free movement of the honest city population. We are justified in seeing in these small houses the typical mode of living for the entire lower class of citizens. Aside from the low heights of the stories, which are made entirely too small for our sanitary views, they represent to us a thoroughly comfortable and also well developed mode of living by the subdivision into different rooms. Of substantial importance for the sense of mediae-

mediaeval German house architecture appears to us therein, that in the ground story of these little houses survives the ancient hall, directly entered from the exterior. That they could not receive traffic and family life at the same time in the limited room was the occasion, that the house hearth in these houses was regularly transferred to the upper story. We must assume indeed, that the pressing need of space first compelled this decided change, by which doubtless a very important disruption was introduced into the very ancient custom of living entirely in common for all members of the family. But slowly and quite gradually did this lead in the larger houses to the transfer of the hearth and the family life into the upper story, as we shall see later. And thus we must ascribe to our small house a peculiar importance in the history of civilization, for in it was made the separation of family life from publicity, without our being able longer to represent this as refined culture and household good fortune.

Note 121. In Diet. Rais. d'Arch. Vol. 6. p. 247, 253.

130. Improvement of the Exterior; Lüneberg, Colmar.

Just as these little houses are very similar in ground plan, their artistic treatment is variable. Here is found the greatest diversity both in simplicity and in greater richness of conception, as well as in the use of different building materials and in the treatment of the masses. In accordance with the building customs of different cities we find gables over the narrow ends, as well as two such houses combined beneath a longer gable, or the eave lies along the street, so that a narrow gable roof covers the house, rising steeply from it.

140 Likewise in the form treatment were developed a multitude of distinct schools. Thus the brick gables of Hanover are characterized by their subdivision by stiff piers, those at Rostock, Lübeck and Lüneberg by their blind recesses, that are combined with stepped plain gable endings. In the domain of half timber construction the greater or lesser corbelling out of the stories plays a great part; besides on even these small houses also occasionally occur corbelled bay windows to animate the mass.

Thus the great multitude of these little houses forms a very

It is 81.8 ft. wide and contains a very high hall, in which
intermediate story. Above this is seen only a single story of
living rooms. A second hall is the adjacent forms character-
istic of the early style. The hall is 10 ft. wide and
also contains over the windows the hole for a hoisting beam,
by means of which the openings in both attic stories were raised,
and thus were the stores introduced, required for the original housekeeping of the time.

animated and instructive representation. To the plain example from Lübeck may here be added one somewhat richer from Lüneberg.(Fig. 137).

It is 21.3 ft. wide and contains a very high hall, in which is constructed over the entrance doorway a small chamber as an intermediate story. Above this is then only a single story of living rooms. A stepped gable in the Lüneberg forms characteristic of the late period terminate the little house at top and also contains over the windows the hole for a hoisting beam, by means of which the openings in both attic stories were served, and thus were the stores introduced, required for the original housekeeping of the time.

Very much lighter and more refined is treated the little house from Colmar (Fig. 138 ¹²²), that again possesses only a single upper story besides the attic. Its effect is particularly based on the gracefully shaped and strongly projecting half timber work in contrast to the stone substructure, and this effect especially in middle and southern Germany led to the preference of this treatment.

Note 122. From my own drawing.

131. Double House in Marburg.

Thus was half timber work employed in a very peculiar manner on a small double house in Marburg, which Schäfer published after his drawing made at the time of its removal (Figs. 139, 140 ¹²³), and that from its entire style probably originated soon after a fire laid that portion in ashes in the year 1320.¹²⁴ As the oldest of the small houses of this type known to us, it requires a particularly thorough consideration.

Note 123. See Schäfer, C. Holzarchitektur Deutschlands im 14 bis 18 Jahrhundert. Berlin. N. D.

Note 124. The author owes this information to the personal aid of his honored instructor, C. Schäfer, from whose sketches he has drawn the representation of this woodwork.

Each of these two houses has a facade about 14.1 ft. wide, the entire double house being thus about 29.5 ft. The depth of the houses is also less. Besides the ground story 9.8 ft. high in the clear they have two other stories, the first having 8.2 ft. and the other only 6.6 ft. in clear height. The anci-

ancient skeleton of the bones has not been preserved. The reason of this is that the skeleton is not complete. In our study all indication of the location of the bones is therefore given only the position of the principal supports and beams, as well as the location of the stairs. In the ground story (Fig. 188) were naturally found the

workshops, through which at the same time led the access to the stairs, just as through the hall of an important person. They open directly toward the street; for they served at the same time to admit the customers, who wished to leave orders for work, and also as shops for such as purchased finished articles for storage. In many cities indeed was introduced for the latter use the severe "market law", i.e. finished products must not be sold in the house, but only in the permanent booth and shops located on the market place. Thereby was ensured

the order of the market. The receipt of the tax to be paid on sales, of the "taxes" very generally collected in the later middle ages.

For the upper stories of our house must we naturally assume in each a room in front, and conjecture that the house built was in the second story, both from the scale of the examples mentioned, because it could only be there in the required intimate connection with the family life. The location of the stairs then leads to the assumption, that the house was only divided in depth into two rooms, so that if there was only a

small hall, in the rear was one, in which as in the chief room of the house, the family gathered around the hearth, the workshop place of the household. As a later change appears the division of this room into a narrow stairway corridor and a rear room with adjacent privy, as it existed at the removal of the house.

Extremely remarkable is the mode of construction of this house, that stands in a certain contrast to that later usual. For the little double house comprises 2 successive "vents",

of which it is divided into 4 bays, two of which form the front room and two the rear hall with the stairs. Each bay is a single frame arranged with 3 vertical posts, that extend from the ground to the roof, and they are connected parallel to the

ancient subdivision of the house has not been preserved by reason of many later alterations; especially lacking is unfortunately all indication of the location of the hearth. In our ground plan is therefore given only the positions of the principal supports and beams, as well as the location of the stairs. In the ground story (Fig. 139) were naturally found the workshops, through which at the same time led the access to the stairs, just as through the hall of an important person. They open directly toward the street; for they served at the same time to admit the customers, who wished to leave orders for work, and also as shops for such as purchased finished articles for storage. In many cities indeed was introduced for the latter use the severe "market law", i.e. finished products must not be sold in the house, but only in the permanent booths and sheds located on the market place. Thereby was ensured the renting of these booths for a satisfactory income, as well as the receipt of the tax to be paid on sales, of the "expenses" very generally collected in the later middle ages.

For the upper stories of our house must we naturally assume in each a room in front, and conjecture that the house hearth was in the second story, both from the scale of the examples mentioned, because it could only be there in the required intimate connection with the family life. The location of the stairs then leads to the assumption, that the house was only divided in depth into two rooms, so that if there was only a small hall, in the rear was one, in which as in the chief room of the house, the family gathered around the hearth, the working place of the housewife. As a later change appears the division of this room into a narrow stairway corridor and a small rear room with adjacent privy, as it existed at the removal of the house.

Extremely remarkable is the mode of construction of this house, that stands in a certain contrast to that later usual.

For the little double house comprises 5 successive "bents", by which it is divided into 4 bays, two of which form the front room and two the rear hall with the stairs. Each bent is a simple frame arranged with 3 vertical posts, that extend from the ground to the roof, and they are connected parallel to the

facade by notched ties. (Fig. 141). The 5 bents are connected together by notched horizontal girts, that lie below the beams, so that four girts may not fall at the same place on the post and greatly weaken it. It is notable, that both for these connecting girts as well as for the beams, the square posts have flat projections like consoles left from the round logs, on which the mortised timbers had a bearing. Curved braces and oblique timbers are gained in the sides of the house to fix the vertical and horizontal timbers, so that in the entire construction, that does not rest on wooden sills beneath, but on 15 columns set on the stone bases, a sliding or turning cannot occur. On the beams of these 5 bents lie the two lower floor beams extended toward the rear. They project at the gable end, the lower one 1.64 and the upper one 2.95 ft.; some of the beams have tenons on their ends on which are supported the posts of the front wall; into these posts are let the sills, the railing girt and a cap timber. The sill rests on the ends of the other beams, so that these also support the facade of the second story. The gable itself has further a slight projection; the beam above the third story lies above this, so that it supports the framework of the roof. This also contains rooms, that were usable for sleeping and store rooms. Decorations do not occur, excepting the carved ends of the posts.

When the framework of the house was so constructed by the carpenter, the owner could complete it by the help of his men, when with unpeeled twigs and branches wound with straw and clay, he wattled the walls in this framework. Even for smoke flues men were satisfied until a much later age with this simple mode of construction. The covering of the roof with straw, shingles or even with tiles, the owner himself could likewise execute; yet tile or even slate coverings also in the cities were originally found only on the houses of rich persons. The honest mechanic was satisfied with straw. Thus if he obtained the wood from the city forest, he secured a cheap house, that he could easily pay for. If then the wattled panels or spaces between the timbers of the facade were smoothly covered with clay from a free hand and then coated with limewash, the woodwork being tinted with red chalk or yellow ochre, then where

and customers passing along the streets. Now, the old people sitting on the benches before the houses, the neighbor women at work and exchanging their news from the window, watched and controlled by the mothers at the windows, the soon to another, it children filled the street and played the shop, where a song started somewhere and passed from one work- it never was interrupted again. The children in the street were such a noise again another, each furnished with its particular sign, from which it was named, the street presented a lively appearance, and life therein might be very comfortable.

such a house adjoined another, each furnished with its particular sign, from which it was named, the street presented a friendly appearance, and life therein might be very comfortable, if master and journeymen worked industriously in the open workshop, where a song started somewhere and passed from one workshop to another, if children filled the street and played there, watched and controlled by the mothers at the windows, the neighbor women at work and exchanging their news from the windows, the old people sitting on the benches before the houses, and customers passing along the streets.

The method of construction of this Marbugg house is plainly based on the custom of erecting the entire house from the ground to the roof at one time, treatment the division into stories as accessory in the second rank. This is manifestly connected with this, that as shown in Art. 7, men started from the one story hut furnished with open framework of the roof. How men first introduced into this simple interior subordinate intermediate floors, is shown by the House at Krete (Figs. 4 to 6), and it is very easily understood, that in the half timber construction house, men added such subordinate divisions as independent additions in the continuous portions of the posts of the wall. That these insertions of beam ceilings were then retained, when the separate divisions grew to full stories is likewise readily explained by the perseverance of manual labor. The later common method and that above several windows, that the stores are each independently constructed above each other included in itself for the early mediaeval custom a breach with tradition. No other example longer remains, that so fully carries out this mode of construction of external walls and internal supports, as our double house; but less complete reminiscences of the ancient customs are found right frequently still. Examples of such citizens' houses shall we yet have to mention in other places; but much more common is this mode of building in rural architecture, where continuous timbers extend through several stories, especially at the angles, and from east of the Elbe to Alsace have remained until nearly our own time.

THE HOUSE OF THE FUTURE

... to the fact that the house is built on a hill, and the elevation is in contrast to the fancifully overhanging facade of the German example, and is characteristic of the less expressive style of French half-timber construction, that also has been sought its charm less in the expressive treatment of the exterior, and in the treatment of the interior. The exterior is initiated from stone architecture.

Note 187. From *Viertel-les-Ducs*, Vol. 8, p. 252.

188. Stone Houses of small *Quirrens* at Olney.

In Germany and also in northern France wood construction has been used in the construction of houses, and in the 18th century, where the latter already occurred in the 18th century, it is very plainly treated as a rule. On the contrary for southern France the half-timbered style is still used, and even in the 19th century of even such houses. In Fig. 148 ¹⁸⁸ on the right, the exterior of the house is half-timbered, in which, however, the exterior of the house is half-timbered, and the interior is half-timbered, but must be a modern restoration. Otherwise the exterior of the house, that is not the only one of its kind, corresponds to the exterior of the house, and the interior is half-timbered. It is certainly far excels in the richness of its decorated window openings, and will be compared to Germany of the 18th century.

Note 188. From *Viertel-les-Ducs*, A. and S. Götting. Architecture

... to the fact that the house is built on a hill, and the elevation is in contrast to the fancifully overhanging facade of the German example, and is characteristic of the less expressive style of French half-timber construction, that also has been sought its charm less in the expressive treatment of the exterior, and in the treatment of the interior. The exterior is initiated from stone architecture.

132. Double House at Laval.

Already to the 15 th century belongs a double house in Laval (Fig. 142 ¹²⁵), that we mention here from the rich abundance of beautiful old dwellings, which were preserved on French soil, at least until recently. It strikingly corresponds in dimensions and arrangement of ground plan to the previously given German examples; only it has the considerably greater depth of 49.2 ft. and the stairs therefore extend lengthwise. The elevation is in contrast to the fancifully overhanging facade of the German example, and is characteristic of the less expensive style of French half timber construction, that also later sought its charm less in the expressive treatment of the architectural members, than in the covering of the surfaces by carvings imitated from stone architecture.

Note 125. From Viollet-le-Duc. Vol. 6. p. 253.

133. Stone Houses of small Citizens at Cluny.

In Germany and also in northern France wood construction permanently long continued to predominate over masonry construction. Where the latter already occurred in the 13 th century, as in the houses from Gelnshausen published by Bickell, it is very plainly treated as a rule. On the contrary for southern France and Italy already from the early period stone examples exist of even such houses. In Fig. 143 ¹²⁶ on the right, we represent such a one (from Cluny), in which certainly the strict closure of the ground story can scarcely be regarded as original, but must be a modern restoration. Otherwise the little house, that is not the only one of its kind, corresponds in dimensions to the previously given German examples. It certainly far excels in the richness of its decorated window forms those, which could be employed in Germany at about the same time, i.e. toward the end of the 12 th century.

Note 126. From Verdier, A. and F. Gattots. Architecture civile et domestique au Moyen-âge et à la Renaissance. Vol. 1. p. 69 et seq. Paris. 1864. -- The authors give there nine Romanesque house facades and designate in the plan about 25 at least there of dwellings from the 12 th century, that it is to be hoped still exist today.

Under the conditions of southern France with its wealth of

higher development by the inclusion of a court. We give in
 below the plan of the house, which shows the arrangement of
 the rooms from the entrance to the court.

We see here (Wings 144 to 146) how the staircase directly ad-
 jacent to the entrance, which was the main entrance, led
 on the one hand to the room beside it, that formed a shop or workshop. A small
 staircase led from the room to the courtyard. The room was
 the portico E to the room H, designated as the kitchen by Viol-
 let-le-Duc by reason of the great smoke hood I, but in this
 location so far from the actual living room is rather to be
 regarded as the workshop of an artisan or other worker with
 fire. In the upper story the stairs end first in the large
 chief apartment L, the day living room of the entire family,
 and then in the smaller apartment M, which was the
 bedroom of the master of the house. The staircase led from the
 doorway ending in a rear sleeping room.

184. House at Ganssberg.

Other masonry houses remaining in southern France scarcely
 recall Italian buildings. Thus a house at Ganssberg (Fig. 147) is
 that exhibits an increased width of 27.5 ft., and it is inde-
 cibly more massive than the houses of the same period in
 the north. The house is built of heavy masonry and is
 an open shop or workshop is true. It contains in each of the
 second and third stories an approximately square hall and a
 small room, which were used for the storage of goods and
 materials. The facade was erected in early Gothic forms in
 the first story and in the second story. The entire appearance
 has strong reminiscences of the palaces of
 the nobles in Siena.

Like these among the great structures of its kind belongs a
 half timber house in Basel with a facade of nearly 28.0 ft.,
 dating from about the first half of the 15th century (Fig.
 148, 149). It again possesses in the ground story be-
 side the entrance the somewhat larger room for the shop or workshop.

earlier civilization were then developed other ground forms under antique influences indeed, which make an impression of higher development by the inclusion of a court. We give in plan and elevation a somewhat larger house of such a kind, likewise from Cluny. ¹²⁷

Note 127. From Viollet-le-Duc. Vol. 6. p. 222, 224.

144 We see here (Figs. 144 to 146) how the stairway directly adjoins the entrance of the house, being separated by a wall from the room beside it, that formed a shop or workshop. A small court F with wall G adjoins in the rear; along it extends the portico E to the room H, designated as the kitchen by Viollet-le-Duc by reason of the great smoke hood I, but in this location so far from the actual living room is rather to be regarded as the workshop of an armorer or other worker with fire. In the upper story the stairs end free in the large chief apartment L, the day living room of the entire family, and which with its large fireplace also served for preparing the food. The gallery N here also contained a small attic stairway ending in a rear sleeping room.

134. House at Caussade.

Other masonry houses remaining in southern France strongly recall Italian buildings. Thus a house at Caussade (Fig. 147¹²⁸), that exhibits an increased width of 27.9 ft., and it is indeed only to be included in our group with the reservation, that enlargement of the lower story according to Viollet-le-Duc, as an open shop or workshop is true. It contains in each of the second and third stories an approximately square hall and a small room, with three rooms in the fourth story besides the stairway. The facade was erected in early Gothic forms in brick mixed with cut stone in very monumental style, and its entire appearance has strong reminiscences of the palaces of the nobles in Siena.

Note 128. See Viollet-le-Duc. p. 235.

Likewise among the great structures of its kind belongs a half timber house in Gaen with a facade of nearly 23.0 ft., dating from about the first half of the 15th century. (Figs. 148, 149¹²⁹). It again possesses in the ground story beside the entrance the somewhat larger room for the shop or workshop.

Above this are corbelled out two upper stories in forms, that with little projecting columns and buttresses represent a transition to the extremely rich treatment, which was occasionally employed in French half timber construction of the late Gothic period.

Note 129. From Gatlhabaud, J. L'architecture du V au XVII me Siècle et les Arts qui en dependent. Paris. 1820 - 1859.

135. Houses of well-to-do Citizens; Merchants' Houses.

The houses last mentioned already by their magnitude and treatment form the transition to the greater houses of the well-to-do citizens and merchants. It would be quite erroneous to assume a deep chasm between the two classes; but as the skilful mechanic competed very well with the smaller merchants in thrift, and indeed could even attain to a greater business, thus the dwellings of both classes exhibit a more gradual change. In fact we find for the species of houses, that we will designate as merchants' houses from the predominating class of their owners, very simple conditions in control and can follow the influence of this simplicity into a time so much later, to the longer the region to which the buildings under consideration belonged adhered to simpler and ruder living conditions. Therefore we shall subdivide our examination here rather by regions, and will begin with the buildings of northern Germany. For there were a series of circumstances at the time opposed to further development into more refined customs of living; to the generally poor nature of the country in regard to the products of the soil; then the fact, that the traffic of these regions was based rather on agricultural products and on the importation of bulky goods and raw materials, than on more finely developed manufactures; also finally the manner of carrying on the traffic, which led the rich merchant on dangerous journeys lasting for months to the rude north and to the uncultivated east, therefore permitting to find comfortable a comparatively simple mode of living.

136. Merchant's House at Lüneberg.

The ground form of the merchant's house in north Germany returns to the living conditions of the oldest simple house, and indeed even more distinctly than that. A very clear example

of this is afforded by the House near the harbor in the Lünenstrasse at Lüneberg in Figs. 150, 151 ¹³⁰, in spite of the fact that it only dates from the end of the 15 th or even the beginning of the 16 th century. If we neglect some later and not very important alterations, it forms in the ground story substantially a great hall occupying the entire ground area and the comparatively imposing height, that received abundant light from the free longer side by four high windows subdivided by mullions. Only in the right corner of the front was a small room separated from the first, certainly as an office and reception room of the merchant, to whom the house belonged. The bay window built before this room as well as that corresponding on the nearer half of the facade are additions made after the mediaeval period.

Note 130. From my own photograph.

Over this small room, that still retains its ancient ceiling of coved beams is arranged a similar room as an intermediate story, and this story rests on a girder supported by beautiful wooden posts, continued in like width through the entire depth of the house. It contains 3 chambers, the two in the rear only receiving light indirectly from the hall. Beneath this in the thereby separated low part of the great hall are both the stairs to the rooms of the intermediate story, as well as the house hearth. Since the hall has a clear height of 14.7 ft., there remains for these separated rooms only a height of 7.0 ft. beneath the beams, by which we then again pass to proportions, that prevailed in the houses of the small citizens.- Above the hall was also constructed another story; but this was not intended for living purposes, but as shown by the absence of windows at the sides and the existence of openings for goods over the entrance doorway, it served as a storeroom for trade goods, as well as the attic above it. Even if we assume, that in these wide storerooms were constructed by screens sleeping places for servants, ¹³¹ then these temporarily separated rooms were very insignificant.

Note 131. It is also not impossible, that at least the men servants even slept in the hall, as they still frequently pass the night in Russia in the hall before the doors of the rooms of the masters.

We must assume that the entire daily life of the family, visits of friends and relatives, all larger assemblages and other activities connected with the pursuit of traffic occurred in the great hall, so far as the latter were not found in the office of the merchant. Here as Möser already stated in regard to the Saxon peasant's house, the housewife could from the hearth overlook and control the entire course of the housekeeping; she could take part in the business pursuits of the master, and in case he were absent on business journeys, could indeed in his place herself oversee the current transaction of the business.

And yet such a house afforded but little convenience, according to our conceptions, and is not to be regarded as equal to the dwelling of a citizen of lesser means. To assume this already forbids the development of the beautiful gabled facade, that with its rich subdivision by members twisted like ropes, and the insertion of round panels decorated by reliefs, represents one of the most expensive examples of its kind. But still more is this assumption faulty, that houses of similar kind are commonly found, both in Lüneburg itself as well as in the other Eastern Hansa cities of Lübeck, Rostock, Wismar, Stralsund etc. They frequently have greater dimensions, as for example the House in Lüneburg at Berg No. 39, that so far perhaps preserves an earlier type, since over the enclosed writing room of the master is no upper room, but a free balcony. Also certain variations in details occasionally occur, without any essential change in the general forms..

137. Lion Pharmacy at Lübeck.

Thus from the series of similar designs, partly coming down into the 18 th century, that Lübeck contains, is prominent the House of the present Lion Pharmacy. Its well preserved rear gable even goes back into the late Romanesque period, but its chief parts only date from the 14 th century, and it is proved to have been one of the most important houses of its time, because in the year 1375 it served as a residence for the wife of the emperor Charles IV. Before the restoration there were on its free wall still plainly to be seen the remains of the original arrangement of the windows, and from these it result-

apartment, when such passage appeared superfluous on account of the smallness of the apartment.

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like the third intermediate story of the front portion.

The rear hall is no longer to be determined. Now the way to
the entire projected storeroom story, are windows and
living purposes, so that only in the front rooms of the lower
method of construction of the house. It forms a kind of half-

resulted, that the entire front portion formed a high wall, in whose rear corner was constructed a small room with an intermediate story. This house indeed exhibits an enrichment, in that at the opposite corner was added a spacious room in the Gothic period, and it shows a smaller gable toward the street. The form of ground plan thereby produced, consisting of a deep main house with a smaller and shallower addition, is not seldom found in German cities, so that one may assume a common reason for its origin. Probably its plan may be explained by this, that the space of a passage leading to the rear court at an earlier time was utilized for such an addition of a state apartment, when such passage appeared superfluous on account of the abandonment of agricultural pursuits.

148 138. House at Münden.

According to the extent and also indeed the date, that may be placed at about the beginning of the 15th century, is to be placed here a House from the "Dunkeln Strasse" (dark street) in Münden (Fig. 152 ¹³²), that is still preserved under the old name of "Zum Ochsenkopf" (To the Oxhead). The front third of this house, which is alone published, possesses three low stories below the projecting attic storeroom, thus rejecting the usual plan of the high front hall. This is found in the rear and larger part of the house, thus occupying about one and a half times the height of the front stories. Over it is found another story, that then ends below the attic storeroom, like the third intermediate story of the front portion.

Note 132. From Schäfer, C. Holzarhitektur vom 14 bis 18 Jahrhundert. Berlin.

How this house was utilized and whether a hearth existed in the rear hall is no longer to be determined. Now the rear hall in both stories and also the front third story, together with the entire projecting storeroom story, are without any divisions by walls, that indicates the use of these rooms for living purposes, so that only in the front rooms of the lower story may be regarded as living rooms. Very notable is the method of construction of the house. It forms a kind of intermediary between the entirely ancient construction of the Marburg House (Art. 131) and the later construction in stories.

It stands yet on the vertical posts of the external walls extending through all the stories from bottom to top, even if no longer with separate posts supporting girders. (Fig. 153). These are set as closely as the beams are placed, so that all beams lying over each other in the lower stories on each side are borne by such posts, and thus form a transverse tie across the house. The beams are tenoned into the posts, besides which the portion left beside the tenon extends into an oblique gain. For the lowest series of beams the tenons pass through the posts, extend considerably outside them, and are fastened by an inserted wooden key, so that the entire house has a strong tension transversely. A considerable number of such ties are behind each other. Their connection together from the street is formed by a longitudinal girder extending in the middle of the house and its posts, that indeed in the lower of the two stories next the hall can only extend to the rear wall of the front stories. All floor beams then run toward the depth and with transverse beams a further and very strong tie in depth is formed for the great posts of the walls. In the wall surfaces of its side walls are omitted all oblique timbers, so that the addition of a projecting gable, that has braces and cross girts and rests on short beams extending back at least to the next beam from the front, also indicates a substantial fastening. The posts themselves are naturally weakened by the tenons of the beams. In order to not allow too many weak places at the same point, the horizontal girts are nowhere placed at the same height as the beams, but are arranged at pleasure between them. They are so placed on the facade, that the windows have the necessary height.

If this mode of construction appears irregular at the first glance, it has endured well and is remarkably suited to the peculiarities of wooden construction. It avoids the numerous divisions of the supports by stories, in which the placing of ends on sides of timbers regularly gives opportunity for unequal settlement. It connects the stiff external walls with longitudinal timbers by the alternating directions of beams and girders in a very superior and suitable manner. Certainly on account of the great number of long and straight oak timbers required,

it must have been costly even then, and for this reason it had to give place to construction by stories.

139. Stone Gabled Houses in Westphalia.

If wooden construction predominated almost without limit in the mountain regions of the Harz mountains and on the Weser, then in the adjacent Westphalia was more commonly employed pure masonry construction. Two Gothic houses with very strongly ancient stepped gables from Stadthagen, that indeed certainly date still from the 14th century, we have to describe in describe in another place on account of the later rebuilding construction undertaken on them (Art. 169). Others of like kind are found, or at least were found recently in Lemgo (Art. 291), Herford etc. The richest development was experienced by these Gothic gabled facades, to which belong plans similar to those last described, as in Münster, where they adjoin each other on the chief square of the city, the elongated "principal market", forming in a proud series one of the grandest city views in the middle ages. They are here particularly expressive, since the facade in the ground story opens by the arrangement of a high vaulted porch. But this enrichment in appearance is not a general custom in Münster; for the partly very imposing and richly ornamented houses of the citizens, that stand on other streets of the city, exhibit enclosed ground stories, like those of other north German cities. Usually in Münster and especially in the houses with porches of the "principal market", the entire lower hall is treated as an undivided shop; behind it then follows an independent room with hearth. Yet this is indeed a later alteration, based on the modern arrangement of the business in the shop; also the very common addition of a third rear room, which is so much narrower, that the hearth room beside it still receives light from the rear facade, is certainly a later addition.

140. Houses at Brunswick.

The German houses treated heretofore all have their gables toward the street. The form and mode of construction of the house are differently treated, where the eave of the roof is usually turned toward the street; but the internal subdivision remains almost unchanged. The *Nagd* House at 9 Langenstrasse

in Brunswick, represented in ground plan and section in Figs. 154, 155 ¹³³, is an example of such a design on a lot wider than deep, and it already dates from the last division of the period to be described here, when the first Renaissance forms began to mingle with the Gothic basis of the construction. But its erection is fixed in the year 1533 by an inscription cut over the doorway. Yet we find extremely simple conditions. In the lower story of the house a great hall occupies two-thirds of the house; aside from a shop room evidently cut off later in very simple shape, there is arranged beside it only one room, over which in an inserted half story is formed a chamber. The stairway lying behind the room, likewise rebuilt in the time of the late Renaissance, permits access from the hall to the upper living room and to the higher stories. These are arranged throughout as storerooms for goods, being externally indicated as such by louvres, which naturally does not prevent separate sleeping rooms from being occasionally cut off from these wide rooms.

Note 138. From Pfeifer, H. Die Holzarchitektur der Stadt Braunschweig. Pl. 3. Berlin. 1892. (Also in Zeits. f. Baum.)-

A great windlass, to which corresponds the necessary traps in the floors, enabled the direct transportation of the goods to and from the storerooms and the traffic room in the hall, or hoisting them from the street through the external louvres to the storerooms. For the sake of the traffic in goods, the doorways of the hall are so large, that with a height of 12.1 ft., the entrance of a loaded wagon is made possible. The location of the original hearth is unfortunately no longer evident. It probably occupied in the hall the place of the shop mentioned, and was sacrificed to the arrangement of that. At the rear wall of the shop a stairway with inclined door hinged at top leads down into the cellar. That the unpretentious mode of living in the latest mediaeval period here evident was not based on the poverty of the owner, is also manifested here by various indications. Thus shows the arrangement of three storerooms for goods over each other, while many similar houses were contented with a single one, so that the house was occupied by the possessor of an important commercial business, and

proves that this traffic produced rich interiors. This sort of house plan does not stand as a disconnected and incongruous reminder from another time, beside the later development, but it passes gradually through numberless intermediate steps into the forms of the later mode of living. As an example of how from such a spacious house with small living room was developed the ground plan of the yet somewhat later house in the Knochenhakenstrasse (Butcher's Street) in Brunswick, built in the year 1868 (figs. 156, 157, 158). It was intended less devoted to commercial uses; in any case it also served for the needs of a limited agriculture, indicated by the arrangement of the court with its stables.

Here the hall is much less important. Its entrance is reduced to a moderate doorway of over 6.6 ft. wide by 8.2 ft. high; at one side wall as well as at the rear wall are circled in two stories 6 living rooms with an independent entrance separated from them. Yet the hall still extends through both stories of living rooms; in one of the great window recesses on the street side is arranged a raised seat, accessible by 4 steps. First in the 19th century times these chairs with large round tops occasionally abandoned in lower Saxony, while on the wall of the hall, still free in our example, is likewise arranged a room. For then remains of the ancient chief room of the house only a narrow entrance corridor, that it would have been scarcely less to make two-story. Then the living rooms of the upper story attained the tasteless arrangement of two ranges of rooms along both finished sides of the house, enclosing between them the hall. This is both artistically and practically considered a wretched outcome of a great and free development of the medieval comfort and efficiency over the rude greatness of the medieval conception of living.

the luxuriant carving covering the surfaces of the half timber proves that this traffic produced rich exteriors.

This sort of house plan does not stand as a disconnected and injudicious remainder from ancient times, beside the later development, but it passes gradually through numberless intermediate steps into the forms of the later mode of living. As an example of how from such a spacious house with small living room was developed the ground plan of the yet somewhat later House in the Knochenhauerstrasse (Butchers' Street) in Brunswick, built in the year 1543 (Figs. 156, 157 ¹³⁴). It was indeed less devoted to commercial uses; in any case it also served for the needs of a limited agriculture, indicated by the arrangement of the court with its stables.

Note 134. From Pfeiffer. Pl. 1.

157 Here the hall is much less important. Its entrance is reduced to a moderate doorway of over 8.6 ft. wide by 8.2 ft. high; at one side wall as well as at the rear wall are arranged in two stories 6 living rooms with an independent kitchen separated from them. Yet the hall still extends through both stories of living rooms; in one of the great window recesses on its street side is arranged a raised seat, accessible by 4 steps. First in postmediaeval times have these plans with large rooms been occasionally abandoned in lower Saxony, while on the wall of the hall, still free in our example, is likewise arranged a room. For then remains of the ancient chief room of the house only a narrow entrance corridor, that it would have been senseless to make two-story. Then the living rooms of the upper story extended over this corridor on the street side, thereby attaining the tasteless arrangement of two ranges of rooms along both lighted sides of the house, enclosing between them the longitudinal corridor and stairs, only lighted indirectly.

This is both artistically and practically considered a truly wretched outcome of a great and free development commenced with simple conditions, actually regarded as a victory of later comfort and effeminacy over the rude greatness of the mediaeval conception of living.

141. House at Goslar.

Nevertheless this is only a late degeneration; in the real

medieval period men acted in a different manner, even if in
 some cases the same result was achieved. The medieval
 period of the house, however, is not so much a con-
 crete, besides a further arrangement of the hall, containing a con-
 siderable number of houses with richer subdivision. We give
 here the House at 11 Frankfurter St. as a characteristic
 example, how by the gradual subdivision of different parts an
 entirely concrete result has been reached from the simple hall
 type (Fig. 159). The principal room of the house, chiefly be-
 longing to the late Gothic, is formed by a great hall, through
 which leads a passage to the court. In its rear, originally
 standing free in space after the ancient custom, but now sep-
 arated by a thin partition from a separate kitchen, is the dis-
 co of the house itself. Beside this a stairway leads down to
 the cellar. On the right side -- first in the Renaissance pe-
 riod, judging from the forms employed -- are arranged two rooms,
 the first and second (Fig. 160). The second room is
 then lies a narrow stairway enclosed between the walls. It
 leads into the upper rooms, that extend above the two rooms
 and the passage, while the hall extends up to the storeroom.
 We then see a part of the building in the great room, hereto-
 fore new to us, that on the left of the court formerly pro-
 tected the house. It was built in the late Gothic style, and
 use and date from a time, when all else was still constructed
 in half timber work. Such portions of buildings enclosed by
 heavy masonry under various names (stone tower, stone chamber,
 stone house, tower, fire hall, warmed room) have frequently
 been added to dwellings constructed of wood, in order that in
 the usual fires by which the cities were visited, an assured
 place of refuge might be had, especially for the more valu-
 able equipment of the house. It is easily intelligible, that
 this interior was developed into the most important room of the
 house. The tower, however, was also a valuable room, and the
 tower evidence, and are also soundly preserved. The tower
 is about 8.8 ft. above the floor of the hall; over this we
 find only one and more rarely two stories. Not seldom are
 these stone rooms, as in our example, constructed with the

mediaeval period men acted in a different manner, even if less regularly and theoretically, but artistically. The ancient imperial city of Goslar, prominently wealthy by mining and commerce, besides plainer arrangement of the hall, contains a considerable number of houses with richer subdivision. We give here the House at 11 Frankenberger St.¹³⁵ as a characteristic example, how by the gradual subdivision of different parts an entirely composite ground plan is formed from the simple hall type. (Fig 158). The principal room of the house, chiefly belonging to the late Gothic, is formed by a great hall, through which leads a passage to the court. In its rear, originally standing free in space after the ancient custom, but now separated by a thin partition from a separate kitchen, is the place of the house hearth. Beside this a stairway leads down to the cellar. On the right side -- first in the Renaissance period, judging from the forms employed -- are arranged two rooms, the rear one projecting considerably into the court. Between them lies a narrow stairway inclosed between the walls. It leads into the upper rooms, that extend above the two rooms and the passage, while the hall extends up to the storeroom. We then see a part of the building in the great room, heretofore new to us, that on the left of the court irregularly projects into the plan. It must be the oldest portion of the house and date from a time, when all else was still constructed in half timber work. Such portions of buildings enclosed by heavy masonry under various names (stonework, stone chamber, stone house, tower, fire hall, warmed room) have frequently been added to dwellings constructed of wood, in order that in the usual fires by which the cities were visited, an assured place of refuge might be had, especially for the more valuable equipment of the house. It is easily intelligible, that this interior was developed into the most important room of the house. They are proved already about the year 1200 by literary evidence, and are also abundantly preserved. Regularly as in our example, they possessed a vaulted cellar, that rose about 3.3 ft. above the floor of the hall; over this we chiefly find only one and more rarely two stories. Not seldom are these stone rooms, as in our example, constructed within the

those best preserved, and that now stands detached and alone recalls the living tower of noble families. It is but modest in its dimensions, but is treated in the vaulted upper story with the comfortable and dry richness, preferred by the late Gothic workmanship of lower Saxony; it likewise still contains the remains of the original decoration in colors.

Note 125. From Vol. II, G. Die Kunstschätze des Fürstentums Lüneburg, 1887, p. 107, fig. 184, 185.

126. Kronsberg house at Garaburg.
As a last example of the enrichment of a later time, by which these old houses with halls must be added to the more developed conditions of living, may be mentioned the Kronsberg house in Garaburg. It likewise exhibits the endeavor for obtaining more room with the progressive closeness of building as well as for greater security against fire. Fig. 184, 185 gives the plan of the second story. While the house in Garaburg still consists of half timber work, the enclosing walls at the neighbors are built of heavy split stone masonry, at the rear of the house is attached a "stone building" of the kind just described, as an independent part of the structure. The division of the rear of the plan into rooms is also not without interest. The plan is a rectangle, the long side of which is on the street side in two stories, together corresponding to the ground story is left three a passage to it. The hall is first of all at the right rear corner by a pair of wide windows, looking on the neighboring court. It contains the best built in an alcove, with a dining room and the stairway with galleries connecting with the upper rooms. At its centre is placed the window, that had to serve for hoisting and lowering the masts and goods to the stercoron and cellar. Beside it and separated by a thin partition also in the ground story is a

main hall, or at least are attached thereto. Perhaps the latter was also formerly the case with the stone structure from Goslar, that we represent in Figs. 159 to 163 ¹³⁶ as one of those best preserved, and that now stands detached and almost recalls the living tower of noble families. It is but modest in its dimensions, but is treated in the vaulted upper story with the comfortable and dry richness, preferred by the late Gothic workmanship of lower Saxony; it likewise still contains the remains of the original decoration in colors.

Note 135. From Wolff, G. Die Kunstdenkmäler der Provinz Hannover. II. 1, 2; Stadt Goslar. p. 327. Hanover. 1901.

Note 136. From Wolff. p. 343.

142. Kromschröder House at Osnaburg.

As a last example of the arrangement of a later time, by which these old houses with halls must be adapted to the more developed conditions of living, may be mentioned the Kromschröder House in Osnaburg. It likewise exhibits the endeavor for obtaining more room with the progressive closeness of buildings as well as for greater security against fire. Fig. 164 ¹³⁷ gives the plan of the second story. While the house in general still consists of half timber work, the enclosing walls next the neighbors are built of heavy split stone masonry; at the rear of the house is attached a "stone building" of the kind just described, as an independent part of the structure. The division of the rest of the plan into rooms is also notable.

Note 137. From Schulke, F. Bürgerhäuser in Osnabrück. Zeit. für Bauw. 1894. p. 498.

In a peculiar way the hall was transferred to the rear, while the street side in two stories, together corresponding to the height of the hall, was occupied by living rooms. Only in the ground story is left free a passage to it. The hall is lighted at the right rear corner by a pair of wide windows, looking on the neighboring court. It contains the hearth built in an alcove, with a dining room and the stairway with galleries connecting with the upper rooms. At its centre is placed the windlass, that had to serve for hoisting and lowering the merchant's goods to the storeroom and cellar. Beside it and separated by a thin partition also in the ground story is a badly

old plan with a great hall was gradually absorbed by the separation of additional rooms.

148. Colosse. House near Church of St. Peter.

If we pass from the lower German interior regions to farther westward, to the art lands of the Rhine, then may we assume from the beginning a more advanced mode of building at this earlier seat of civilization. And in fact already in the 13th century the dwellings by their entire appearance stand on a higher plane; particularly in their stone construction has been preserved for us indeed the oldest remains of the art of building in the Rhine valley. The houses at least of the heavy studded house (148, 149), that stood near the Church of St. Peter. With all the earnestness of the first ascending mass of the wall, it has rich ornamentation in the columns of the ground windows, and in comparison with the houses heretofore described, it surprises us by the strong isolation of its elevation, kept as symmetrical as possible.

Note 148. Colosse, St. Bernhard der Bonaventura von 7 etc.

Stadthaus am Wirtshaus. Munch.

Regarding the internal subdivision, we may easily conclude from the arrangement of the windows of the ground story, that the well known arrangement of a great hall also existed here in combination with a separate office for the merchant, whose location is indicated by the windows enclosed by a triangle at the left end of the facade of the ground story. The upper story may have very well have been the undivided room of a great hall; it is indeed more probable that also here separate chambers were divided from the upper part of the great hall.

Similar conditions for a slightly later time are also

by the somewhat narrower house on the Altmühl, first mentioned barely was mentioned and was rebuilt for the arrangement of a great hall in the ground story. We may regard it as

for conditions at Cologne in the 13th century.

Note 149. A representation of the former condition

lighted dining room, with a maid's room in the intermediate story, and thus this house also supplies an example of how the old plan with a great hall was gradually absorbed by the separation of additional rooms.

143. Cologne. House near Church of S. Peter.

If we pass from the lower German interior regions to farther westward, to the art famous Rhenish cities, then may we assume from the beginning a more advanced mode of building at this earlier seat of civilization. And in fact already in the 13th century the dwellings by their entire appearance stand on a higher plane; particularly in them stone construction has already passed into a far higher development. In "holy" Cologne are or rather were preserved for us indeed the oldest monuments of these wealthy citizens. From Boisseree¹³⁸ we still have at least drawings of the heavy gabled House (Fig. 165), that stood near the Church of S. Peter. With all the earnestness of the flat ascending mass of the wall, it has rich ornamentation in the columns of the grouped windows, and in comparison with the houses heretofore described, it surprises us by the strong isolation of its elevation, kept as symmetrical as possible.

Note 168. Boisseree, S. *Denkmale der Baukunst vom 7 bis 13 Jahrhundert am Niederrhein. Munich.*

Regarding the internal subdivision, we may easily conclude from the arrangement of the windows of the ground story, that the well known arrangement of a great hall also existed here in combination with a separate office for the merchant, whose location is indicated by the windows enclosed by a triangle at the left end of the facade of the ground story. The upper story may here very well have been the undivided room of a great solar; it is indeed more probable that also here separate apartments were divided from the upper part of the great hall.

Similar conditions for a slightly later time are also shown by the somewhat narrower House on the Altmarkt, that unfortunately was mutilated and was rebuilt for the arrangement of a pharmacy in the ground story.¹³⁹ We may regard it is typical for conditions at Cologne in the 13th century.

Note 139. A representation of the former condition may be

found in "Latin and other papers" etc. (174, 175, 80).

Such a house presents in its style a considerable number of

features which are characteristic of the late 17th century.

There was no longer suited to the later conditions of commerce in Cologne. To the formerly usual articles of merchandise which were added wine as a product of predominate importance, for which Cologne formed the chief place of deposit. The wine trade requires spacious cellars; therefore for

the merchant's house in Cologne the arrangement of such was combined with the plan of a great hall; to this was annexed a second story serving for living purposes, especially by great and high windows, between the lower hall and the upper stories utilized for storage rooms for goods.

174. Cologne: Houses on the Rhine.

An entire group of such houses, the middle one of which was a little changed by the later addition of a Renaissance facade, is represented in Fig. 174. They already exhibit all the characteristics of Cologne houses on the exterior. Characteristic for the entire group on the lower line is the constant employment of rectangular windows with stone casings, as well as the strong cleaning of the second story by great openings for light and the use of wrought iron beam anchors to animate

the facade. The houses on the Rhine, especially in the Netherlands and also in many of the Hansa cities on the Baltic Sea influenced thereby. They continued beyond the mid-

dle ages, were generally richly ornamented, in order to give thereby the name of the owner or the date of erection. Characteristic for the treatment of Cologne architecture is also the

attainment cornice of the house, whether it enclosed the base of the roof and the narrow gutter arranged there, as here and

on the Breiten House, or that it followed the eave of the roof in the form of a balustrade with small steps. According to

the frequently repeated statements, we need not see in it a favorite element for war, but can regard it as a favorite

element for the treatment of the facade, especially in the case of the Breiten House, which is a good example of the latter.

Two smaller parallel roofs beside each other, each as shown in

found in *"Köln und seine Bauten"* etc. p. 114. (Fig. 90).

Such a house presents in its attic a considerable number of rooms, like the lower German houses first considered; but its arrangement was no longer suited to the later conditions of commerce in Cologne. To the formerly usual articles of mediaeval traffic was here added wine as a product of predominating importance, for which Cologne formed the chief place of deposit. The wine trade requires spacious cellars; therefore for the merchant's house in Cologne the arrangement of such was combined with the plan of a great hall; to this was inserted quite regularly there a second story serving for living purposes, recognizable externally by great and high windows, between the lower hall and the upper stories utilized for store-rooms for goods.

144. Cologne; Houses on the Filzgraben.

An entire group of such houses, the middle one of which was a little changed by the later addition of a Renaissance gable, is represented in Fig. 166 ¹⁴⁰. They already exhibit all the peculiarities of Cologne houses on the exterior. Characteristic for the entire group on the lower Rhine is the constant employment of rectangular windows with stone crosses, as well ¹⁵⁵ as the strong opening of the second story by great openings for light and the use of wrought iron beam anchors to animate the facade. Such anchors occur outside Cologne, particularly in the Netherlands and also in many of the Hansa cities on the Baltic Sea influenced thereby. They continued beyond the middle ages, were generally richly ornamented, in order to give thereby the name of the owner or the date of erection. Characteristic for the treatment of Cologne architecture is also the battlement cornice of the house, whether it enclosed the base of the roof and the narrow gutter arranged there, as here and on the Etzweiler House, or that it followed the edge of the roof in the form of a gable with small steps. According to the frequently repeated statements, we need not see in it actual arrangements for war, but can regard it as a favorite ornamental motive. Peculiar is then the frequently recurring motive in Cologne, instead of one great roof, the building of two smaller parallel roofs beside each other, such as shown by

... to the stairs, then in a great hall, but then behind this rather by the erection of another story for a storeroom.

... described from this arrangement of the roof.

... 140. From 151a and 151b etc. (Fig. 20).
... the internal arrangement of houses, even if not understood,
... was not remained recognizable in everything essential in the
... medieval sense. Our source ¹⁴¹ describes it as follows in
... from the same. p. 114.

... above and for hanging in goods, before it in the interior the
... door to the ice stairway, over the lintel the so-called "head"
... with two iron teeth for holding back the fastened beam with a
... the wheel for the cash rope; beside it a small portal for the
... entrance of the occupier and his visitors, above being glass
... windows, on the right a small low arch or office with a gallery
... and a so-called enclosed room, living rooms for the servants
... in the rear and also other for the family. At the rear
... wall of that hall of about 15.0 to 15.5 ft. high was found a
... doorway to the court, also to a kitchen and the great doorway
... to the salon, the living and dining room of the family, recep-
... tion room, also 15.4 to 15.7 ft. high and with a beam ceiling,
... and frequently richly varnished with columns (for example the
... Jacob House in the Breitenasse ¹⁴²); in the aisle at the end

... en, convenient, often very artistically treated winding stair-
... way with carved posts. A rotating shaft connected the rooms
... of all stories, the first one of which still partially served
... for living purposes, while the others chiefly contained store
... and bedded rooms, that also were supplied by a hoist screw
... the projecting beam. Behind the rooms extended a broad gal-
... ly to the attic storeroom. All windows were grouped next the
... street and the court, at least in the ground story, and were
... frequently closed by strong iron shutters.

... 142. Commonly, or we might say regularly at first, 14-
... is taken was found in the second story of the house, instead
... of in the addition here described next the court, as in B-

the house on the left in our group. There is less space afforded to the attic than in a great gable roof, but men helped this rather by the erection of another story for a storeroom, since they avoided the predominance of horizontal sky lines, that resulted from this arrangement of the roof.

Note 140. From Köln und seine Bauten etc. 'Fig. 90).

The internal arrangement of houses, even if not untouched, has yet remained recognizable in everything essential in the mediaeval sense. Our source ¹⁴¹ describes it as follows in accordance with the previously mentioned north German houses.

Note 141. From the same. p. 114.

At the side a great gate or doorway furnished with light above and for hauling in goods, before it in the interior the door to the log stairway, over the lintel the so-called "head" with two iron teeth for holding fast the inclined beam with the wheel for the cask rope; beside it a small portal for the entrance of the occupier and his visitors, above being great windows, on the right a small low shop or office with a gallery and a so-called suspended room, living rooms for the servants in the business and also often for the family. At the rear wall of that hall of about 18.0 to 19.7 ft. high was found a doorway to the court, also to a kitchen and the great doorway to the salon, the living and dining room of the family, reception room, also 16.4 to 19.7 ft. high and with a beam ceiling, also frequently richly vaulted with columns (for example the Zabach House in the Sternengasse)¹⁴²; in the angle at the end of the house corridor being found as a rule the generally wooden, convenient, often very artistically treated winding stairway with carved posts. A hoisting shaft connected the rooms of all stories, the first one of which still partially served for living purposes, while the others chiefly contained store and packing rooms, that also were supplied by a hoist above the projecting beam. Behind the rooms extended a broad gallery to the attic storeroom. All windows were grated next the street and the court, at least in the ground story, and were frequently closed by strong iron shutters.

Note 142. Commonly, or we might say regularly at first, this salon was found in the second story of the house, instead of in the addition here described next the court, as in Bremen.

146. Colonel: Bawell House.

(Fig. 147, 148).

House 148. Remodeled from 146 and also Bawell etc.

It is approximately square and is again covered by two parallel roofs. At the upper corner of the house and along the roof of the Gable, but in much more graceful proportions are three occasional bay windows, corbelled out on small columns and according to the same prototype (Fig. 147, 148) is given an ornamental battlement cornice, that on the house itself is replaced indeed by a later straight wall. The street corner is further characterized by a statue of the Madonna, and in all architecturally active lines in Germany formed a favorite ornament of houses and streets. At the right corner of our elevation and high above an apparently ornamental large corner, similar to those found on other houses. This is explained by the adjacent house, a considerably lower house built in 146-148, which had a projecting table, that rested on this corner.

Of the upper stories of the house, we must regard the high-er story as a separate unit with its own roof and its own elevation. Beneath it follows the chief living story, that is to say the high lower story. The high lower story is here also some sleeping rooms. The high lower story is separated by a small belt has recently been rebuilt with great snow windows. We do not follow in our reproduction the present elevation given, since we may not assume, that in such an important house were built open retail shops. With reference to Fig. 146 and to the given description of the passage in the plan, we extend this lower story, so that in the middle the great doorway and a great and high window with stone corbelled out on small columns, that is to say the location of the great hall of the house. On the right side, we extend the elevation of the upper story.

145. Cologne; Etzweiler House.

Larger and more imposing is the Etzweiler House, that occupies the corner "Unter Taschenmachern" (Under Pocket-makers.). (Fig. 167 143).

Note 143. Reproduced from Köln und seine Bauten etc.

It is approximately square and is again covered by two parallel roofs. At the upper corner of the house and after the model of the Gürzenich, but in much more graceful proportions are three octagonal bay windows, corbelled out on small columns and adorned by tracery. Between them on our representation and according to the same prototype (Art. 182; Fig. 228) is given an ornamental battlement cornice, that on the house itself is replaced indeed by a later straight wall. The street corner is further characterized by a statue of the Madonna, beneath a slender ascending canopy, a decoration that everywhere and in all artistically active times in Germany formed a favorite ornament of houses and streets. At the right corner of our elevation and high above an apparently enigmatical large corbel, similar to those found on other houses. This is explained by the adjacent house, a considerably lower house furnished with a gable. This without doubt, as frequently a custom in Aix-la-Chapelle, had a projecting gable, that rested on this corbel.

Of the upper stories of the house, we must regard the highest with its nearly square windows with stone crosses as a storeroom story, whose hoisting beams still project on the side elevation. Beneath it follows the chief living story, that first of all received the previously mentioned salon, and beside it perhaps also some sleeping rooms. The high lower story separated by a small belt has recently been rebuilt with great show windows. We do not follow in our reproduction the representation given, since we may not assume, that in such an important house were built open retail shops. With reference to Fig. 166 and to the given description of the passage in the plan, we extend this lower story, so that in the middle the great doorway and a great and high window with stone cross denote the location of the great hall of the house. On the right and left thereof we assume the separation of smaller rooms

with intermediate stories, into one of which again extends the entrance to the cellar, furnished with log stairs and "head".

146. Dutch Citizen's House at Edam.

Very peculiar and clear again an old Dutch citizen's House¹⁴⁴, published by Mühlke, shows how a later time adapted the single great hall to its own views by divisions. The House (Figs. 168 to 170¹⁴⁴) is located in Edam, and has a narrow and deep form, turning its late Gothic brick gable toward the street.

Note 144. From Mühlke, K. Streifzüge durch Alt-Holland. D Denkmalspflege. 1904. p. 26 et seq. -- Also by the same author; - Von nordischer Volkskunst. Berlin. 1906.

The ground plan (Fig. 170) shows us the high front hall extending the entire width of the house and well lighted by the great windows of the facade. From this at the right side a narrow passage leads to the court, on which lie the middle two story portion and the rear chamber also extending the entire height like the hall. The two story middle part is sunk with its floor about 2.6 ft. below the remainder, in order to obtain sufficient height for two stories. (Fig. 169). Its lower room has a hearth and is in direct connection with the small cellar, and serves as kitchen and dining room of the family; the intermediate story is divided into two upper chambers, furnished with fixed masonry bedsteads, and is thereby indicated as the sleeping rooms of the family. Each is reached by a separate stairway. Another fixed bedstead is also constructed in the rear hall. The cross section of the house (Fig. 168) shows how by the utmost possible arrangement of window surfaces, pains were taken to fully light and ventilate these middle rooms; it also shows the hall-like form of the front of the house, as well as the apparently undivided upper story. Notable is also the treatment of the framework of the roof on account of its relation to the great hall of the early mediaeval Imperial Hall at the Hague, given in Fig. 64. The whole is indeed substantially ornamented by additions and equipment of a later time, but its nucleus is still purely mediaeval. It affords the most valuable support for the mode in which we can conceive otherwise the addition of sleeping room and cots.

147. Citizens' Houses of Northern France; Amiens.

Similarly as in the west of Germany in the rich commercial

city of Cologne, there are also in the north of France richly treated stone houses already remaining from a relatively early time, houses that may be regarded as the dwellings of well to do citizens. Unfortunately all statements relating to their arrangement are wanting; but the illustrations of them in our possession allow us to recognize, that the part of the building next the street, differing from the German examples last mentioned, were not arranged for the reception and storage of goods. It is there conjectured that the entire commercial traffic was transferred to the court. As an example may serve a House (Fig. 171¹⁴⁵), that stands in S. Matrin St. in Amiens, where indeed, as for so many German architectural monuments, the ground story is not preserved in its ancient form.

Note 145. From Viollet-le-Duc. Vol. 6. p. 324 (Fig. 9).

In case the form drawn by Viollet-le-Duc be correct, it contained a wide doorway to the court, that was also adapted to separate the wagon traffic with the merchant's goods from the other business of the house. Besides this remained in the ground story only one room of moderate dimensions. What the two upper stories contained is not apparent. Judging from the abundance of stepped windows decorated by columns, both stories served for living rooms. Above rises in artistically well calculated contrast the plain gable only enclosed by its fine coping, with but a narrow window opening. If the roof contained a storeroom for goods, then must it have been accessible from the court by hoisting windows, such as are usual on the facades in Nuremberg.

148. Southern France; House at S. Antonin.

Similar architectural conditions, only more like the southern, are presented by the House mentioned by Viollet-le-Duc from the little city of S. Antonin. (Fig. 172)¹⁴⁶).

Note 146. From the same. p. 228. (Fig. 8).

It opens from the market place in the ground story with a porch having three openings with pointed arches; the second and third stories each have a series of 8 pointed windows, alternately separated by piers and columns.

Like so many others, it contains in the interior, which has been preserved, a great business room or storeroom for goods

in the ground story; above this in each story was formerly a smaller room. Likewise there are wanting all arrangements for the heating and storage of large quantities of goods, as in the case of the houses in the French town in the south. In these countries with an earlier developed financial system the houses were built on the hillside and the houses were in the north, or that men were accustomed to build the houses separate from the dwellings.

Again a different picture appears to us, if we turn to the houses of the north. On the other hand, the climate made it necessary for better protection from injury by the cold of winter, than was required in sunny southern France. Also here the houses were built at first formed a single internal room; yet in the 14th century it is proved, that the wooden houses of the city of London, which were designated by the name of "one room houses," proceeded a tendency toward a greater subdivision of the entire space.

While men in the north were satisfied with one room and sleeping chambers built off in the great hall, but left the centre of living with the house built in the ground story, if the available space allowed this anywhere, men here strove very soon to thoroughly transform the ancient house of a single room into the modern house by the arrangement of a "hall" or entire upper story is proved by literary evidence to be the place in which men were accustomed to eat and to sit. It also bore the name of hall or summer house, and may be arranged for heating or a fireplace, judging from the 14th century.

in the ground story; above this in each story was formerly a great hall, adjoining which in the rear was the stairway and a smaller room. Likewise there are wanting all arrangements for the hoisting and storage of large quantities of goods, just as commonly occurs in the houses known to us in southern countries (Italy and Spain). This may have its reasons, that in these countries with an earlier developed financial traffic, the wholesale commerce was less concerned with bulk goods, than in the north, or that men were accustomed to build the warehouses separate from the dwellings.

149. Citizens' Houses in middle and southern Germany.

Again a different picture appears to us, if we turn to the provinces of middle and southern Germany. A more refined civilization based on the earliest traditions there did not permit the rude mode of living in north Germany with its high and wide halls. On the other hand, the climate made it necessary for better protection from injury by the cold of winter, than was required in sunny southern France. Also here the house indeed at first formed a single internal room; yet in the 14th century it is proved, that the wooden houses of the citizens of Munich, which were designated by the name of "one room house", extended to the roof without any subdivisions. But beside this proceeds a tendency toward a greater subdivision of the entire space.

While men in the north were satisfied with some rooms and sleeping chambers parted off in the great hall, but left the centre of living with the house hearth in the ground story, if the available space allowed this anywhere, men here strove very soon to thoroughly transform the ancient house of a single room for the requirements of comfortable living. Already early here for the city house the important arrangement of a "solar" or entire upper story is proved by literary evidence¹⁴⁷ to be the place in which men were accustomed to eat and to rest. It also bore the name of hall or summer house, and may be regarded as an originally undivided room, that was without any arrangement for heating or a fireplace, judging from the last appellation.

Note 147. See Heyne. p. 221.

Thence it would follow, that the house hearth at first retained its place in the lower story, so that this also further formed the chief room of the house. But in a structurally undivided upper story men might be quite comfortably arranged by cutting off some parts by hangings or by light wattled partitions, and thereby easily adapt it to the changing requirements of living. In this way might such plain structural plans remain to a later time. Houses in which such an undivided upper "summer house" is still recognizable, may still be found in some examples at Erfurt, Treves etc.

150. House in Erfurt.

We give in Fig. 173 ¹⁴⁸ a view of such a building standing in Allerheiligenstrasse at Erfurt, that by an inscription on the beautiful bay window is dated in the year 1429. The ground plan forms a simple rectangle of about 65.6 ft. long by 39.4 ft. wide.

Note 148. From my own photograph.

To the great entrance doorway 11.5 ft. wide corresponds an equally large exit to the court; on the right of this driveway, where indeed was formerly the hearth place, is a room and a stairway evidently built later. In the upper story, now subdivided by all sorts of modern partitions, may be seen two carefully treated octagonal posts built in these walls, which originally stood free in the room and bore the longitudinal girder by means of elaborate cap timbers.

151. Schweitzer House at Neustadt-on-Orla.

Yet for the later time the construction of fixed walls in these great rooms forms the rule, wherein men commenced with the separation of a row of rooms on the side next the street. At some time, at least among those more well to do, it became insupportable to the increasing feeling for comfort and for a more secluded family life, to retain the chief apartment of the house and the hearth place in the open room of the ground story, where at each opening of the house door admission was afforded for wind and air currents, as well as to the view of strangers passing in the street. Very little relief, and many inconveniences for home life resulted, when the hearth was enclosed by a slight partition and perhaps beside the kitchen t

of the first house just described, that exterior is...
at first, as it was formerly closed free in the lower room.
The late Gothic Schwestern House at Penzance-C-0 dates from
the year 1861, and gives a good representation of such a
even already quite comfortable according to modern con-
(Ziss. 174, 175, 176). Corresponding to the increased re-
means of the late period, it even exhibits two stories of liv-
ing rooms above the ground story. The upper one of these is
thus distinguished by a bay window extending into the attic,
and was formerly covered by a high pointed roof, in the in-
terior being covered by a gabled small attic vault. This
nd story may therefore be regarded as the most important
ance story of the house, though also in the lower story is
found a wooden ceiling of inserted boards with a heavy mould-
beam.

We give the plan in Pl. 175. The great hall or "Kammer-
use" therein still far exceeds the other rooms in extent.
ly on the street side extends a row of three rooms, the middle
one being characterized by the bay window mentioned and by a
richly treated beam ceiling. At the rear of this series of
rooms and on the left lay the bath, last originally
the hall, even if it is now with some chambers separated from
the hall by thin board partitions. At nearly the middle of
the hall ended the stairway ascending from below, while in
rear corner at the right a smaller stairway led up to the sit-
ing room. Thus this hall afforded a spacious room, especially
ed to gather the entire family around the hearth in a com-
life, while the separate chambers could partly serve for
of occasions, partly for sleeping rooms. Through the
of the house extends a great hall, which is a common
the privies located there. Such a division of the house into
two parts, a front row of living rooms and a rear hall, in-
ed stood free the bath and the stairway, its very corner
especially in middle Germany. It is found toward the north
ven to the Westphalian frontier, and there meets with

thus created was also arranged a room, about as the lower story of the Erfurt house just described, that exhibits it as a later arrangement. But as a rule men went further and placed the hearth in the great upper hall, where it also stood free at first, as it was formerly placed free in the lower room. The late Gothic Schweitzer House at Neustadt-o-O dates from the year 1551, and gives a good representation of such a house, even already quite comfortable according to modern conceptions. (Figs. 174, 175 ¹⁴⁸). Corresponding to the increased requirements of the late period, it even exhibits two stories of living rooms above the ground story. The upper one of these is thus distinguished by a bay window extending into the attic, and was formerly crowned by a high pointed spire, in the interior being covered by a graceful small star vault. This third story may therefore be regarded as the most important residence story of the house, though also in the lower story is found a wooden ceiling of inserted boards with richly moulded beams.

160 We give its plan in Fig. 175. The great hall or "summer house" therein still far exceeds the other rooms in extent. Only on the street side extends a row of three rooms, the middle one being characterized by the bay window mentioned and by a richly treated beam ceiling. At the rear of this series of rooms and on the left lay the hearth, that originally stood in the hall, even if it be now with some chambers separated from the hall by thin board partitions. At nearly the middle of the hall ended the stairway ascending from below, while in the rear corner at the right a smaller stairway led up to the attic. Thus this hall afforded a spacious room, splendidly suited to gather the entire family around the hearth in a common life, while the separate chambers could partly serve for festal occasions, partly for sleeping rooms. Along the court side of the house extends a broad open gallery, affording access to the privies located there. Such a division of the house into two parts, a front row of living rooms and a rear hall, in which stood free the hearth and the stairway, is very common and especially in middle Germany. It is found toward the north even to the Westphalian frontier, and there meets with the north

German house with a hall of the kind previously described, for example in Minden. It likewise extends over the lower Eichsfeld (Duderstadt, Northeim etc.), where it entirely predominates, as far as Brunswick, and also there maintains a not unimportant part beside the north German type of house.

152. Merchant's House in Nuremberg. (On Dürerplatz).

When men had once progressed so far in the separation of the living rooms, then it lay next, especially on a restricted site, to thereby create other needed rooms, so that also the rear of the house was utilized for the arrangement of separate rooms. But in better times a portion of this rear part always remained free, and at least in the form of a lighted corridor served for lighting the hall. An excellent example for representing this mode of living is given by the beautiful late Gothic House at 1 Dürerplatz in Nuremberg, whose form of ground plan is repeated a hundred fold. (Figs. 176, 177 149).

Note 149. From my own drawing.

It possesses in the ground story a great doorway, leading into the open hall. From this is only cut off a small office in the front corner on the right; the interior is otherwise undivided. On the left of the entrance doorway was still located a few years since the great scales for weighing the bales of goods. The stairway to the upper story lies at the outside in the court, according to primitive custom. It was rebuilt in the Renaissance period and for greater convenience, it was then extended by a branch terminating in the court. At the rear of the court lies a small wooden stable. Thus in all essentials the ground plan is almost exactly similar to the north German example given in Fig. 151. On the contrary the upper story is thoroughly different. It is reached by means of the open court portico and the stairway already mentioned, and it contains two front rooms, grouped around the remnant of a hall, together with a room or kitchen next the court, as well as a chamber and the stairway leading upwards. The exterior is constructed of massive ashlar masonry and is on the whole plain; but the bold mouldings of the pointed-arched entrance doorway and a graceful bay window in the second story animate these surfaces. On the contrary the roof is treated in the

most animated manner by the richest development of its main part.

188. Metcalf's House in the Bertrams in 1888.

In such a house the upper stories could already be utilized

as needed for living purposes or for storage rooms; yet still

about one was not yet taken for a greater traffic. An

last example may serve as a type, how the merchants created

and

commanded, but at the same time gave their houses a certain

deposition, i.e., so extended them, that alterations and ab-

uses could easily be made, was remained in Nuremberg. We give

its representation on the adjacent plate and its description

in von Besserstein's words. It is the house at 7 Bertrams.

that in the decades from the middle of the 18 to century onward

when all alterations were undertaken, belonged to a friend of

one, who made it his care to leave it in the condition, in a

which he had purchased it about the middle of the century.

The plan of the 18 to century in all parts was still clearly

preserved; excepting at about the change from the 18 to the

19 to century the old plan was not changed, and the

corridor. Besides also some walls were then first inserted new,

but again, it needed earlier, what have already been added in

the 18 to century; for what we have already termed separately

by means, that without affecting the nucleus of the house, any

walls might be added or removed, and that in the entire house

not a single structurally necessary internal wall existed. A

little decorative ornament in the corridor, a slight alteration

on in the stairs, that occurred in the 18 to century, changed

nothing in the character, and even if the earlier one

our art friend did something each year toward "restoration,"

the house in accordance with his modest means, i.e.,

room or had an old paneling varnished, or had some wainscoting

removed and the walls plastered, still the last corner was so

and the house remained, that the old plan was not changed, and the

apartments and to all work of restoration, so that

the house must be changed, except perhaps the removal of

stairs, with which the former successor of the house

filled it. The house of 1888, as we call it

most animated manner by the richest development of carving on its main part.

153. Merchant's House in the Bergstrasse in Nuremberg.

In such a house the upper stories could already be utilized as needed for living purposes or for storage rooms; yet sufficient care was not yet taken for a greater traffic. An excellent example may serve as a type, how the merchants created great storerooms for themselves in the animated increase of commerce, but at the same time gave their houses a certain adaptability, i.e., so arranged them, that alterations and changes could easily be made, has remained in Nuremberg. We give its representation on the adjacent plate and its description in von Essenwein's words. It is the House at 7 Bergstrasse, that in the decades from the middle of the 19 th century onward, when all alterations were undertaken, belonged to a friend of art, who made it his pride to leave it in the condition, in which he had purchased it about the middle of the century.

The plan of the 15 th century in all parts was still clearly preserved; excepting at about the change from the 16 th to the 17 th century the old rooms had been furnished with new wainscotings. Perhaps also some walls were then first inserted new, but which, if needed earlier, might have already been added in the 15 th century; for what we have already termed adaptability means, that without affecting the nucleus of the house, any walls might be added or removed, and that in the entire house not a single structurally necessary internal wall existed. A little decorative ornament in the corridor, a slight alteration in the stairs, that occurred in the 18 th century, changed nothing in the character, and even if the earlier owner before our art friend did something each year toward "beautifying" the house in accordance with his modest means, i.e. papered a room or had an old paneling varnished, or had some wainscotings removed and the walls plastered, still the last owner was so much the more conservative, thus being an avowed enemy of the architect and to all work of restoration, so that nothing in the house must be changed, except perhaps the removal of some papers, with which the former possessor of the house had beautified it. For sake of cleanliness also, as he said to the

architects, he usually admitted some of their "colleagues" to his house annually, i.e. some whitewashers, in order to have white-coated anew the parts of his house, that had been white-washed from ancient times, whether these were so coated from the beginning or first in the 18th century, yet he liked to preserve in certain parts of his house his spiders and never permitted the removal of the dust, so that his house always retained the impression of untouched antiquity. Yet times change; he died, and what he had most feared occurred; his house passed into the hands of an architect, who modernized the entire internal arrangement, so that now for several years it has yielded a return corresponding to its capital value. Yet this new owner fully understood what he must change for this purpose. The most beautiful wainscoting is now in the Germanic Museum; he knew how to utilize others again, and before all he made accurate drawings of its condition, from which our representations were drawn.

The house consists of two entirely separate buildings; a front house lying on the street and the rear house separated therefrom by a court. The front house has a cellar beneath it, the entrance to the cellar being from the street at the corner of the house. Only a structure in the hall, to which a stairway leads from above, in the corner on the left of the observer, recalls the cellar in the interior. This structure forms a sort of gallery, on which sat an employee of the merchant, who could record the merchant's goods sent out and received. If a festival were held in the hall of the house, the musicians sat there. One window, that opened on an alley from this gallery, may have originally existed; the other three did not belong to the original design. Otherwise the entire ground story was at first one great hall with entrance doorway in the facade, to open into the court. Great scales on the wall, hanging on a great movable arm permitted the weighing of the largest and heaviest bales. In about one-fourth of the hall was later constructed a vaulted room, in which special goods could be stored.¹⁵⁰ A wooden winding stairway led upwards. The court could also be filled with wares; it contained in the division wall next to the neighboring house a draw well common to both.

... in the ... of the ...
... in which similar separated parts of
the second story was used as a sitting room for the
... of the ...
... in North Germany, one may indeed also see in
this building room rather a small office.
The rear house was divided likewise into two parts; one
was used and either served as a stable for horses or for
storage of special goods, the other as a passage to a rear cor-
ner, that occupied the width of the lot, and which could be
used out as a small garden, as it was for a long time, if the
space was not also occupied by the business. A staircase
way led upward in the rear house. The hall did not have the
story was evidently likewise intended for the business, and a
hall in the front house next the street side was separated from
the remainder by a frame partition, that could easily be re-
moved, and this occupied the smaller half of the second story.
Therein was the writing room of the merchant, who indeed had
numerous assistants; the hall itself must have been no further
... of the partition walls could not be
... and that they are mentioned in our drawing, which
the partition indeed created a number of separate rooms
for several goods, particularly in the vicinity of the corner
... in the ...
... been a kitchen. A first wooden open gallery represented
... an undivided room with a great roof in the middle.
The walls were already early introduced; for the three rooms
... of the 17th century. In
... of the front house was the dwelling of the family.
... had the extremely beautiful ...
... is now found in the Germanic Museum. The two ...
... served as sitting room; the room beside the staircase
may have been the original kitchen, as that the table ...
... have been set there in the hall. The rear house was also ...

Note 150. According to the proportions of other merchants' houses in southern Germany, for example, of the one on the Dürerplatz just described, in which similar separated parts of the ground story manifestly served as a writing room for the master or a bookkeeper, as well as by reason of the similar plan prevailing in north Germany, one may indeed also see in this vaulted room rather a small office.

The rear house was divided lengthwise into two parts; one was vaulted and either served as a stable for horses or for storage of special goods, the other as a passage to a rear court, that occupied the width of the lot, and which could be laid out as a small garden, as it was for a long time, if the space was not also occupied by the business. A straight stairway led upward in the rear house. The hall did not have the height usual in Cologne; on the other hand the entire second story was evidently likewise intended for the business, and a hall in the front house next the street side was separated from the remainder by a frame partition, that could easily be removed, and this occupied the smaller half of the second story. Therein was the writing room of the merchant, who indeed had numerous assistants; the hall itself must have been no further divided in this story, where employees and strangers transacted business; yet the age of the partition walls could not be determined, and thus they are reproduced in our drawing, since the merchant indeed always needed a number of separate rooms for special goods, particularly in the vicinity of the counting room for samples of goods. In the room beside the stairway had long been a kitchen. A light wooden open gallery represented the connection with the rear house, whose second story was originally an undivided room with a great post in the middle. Yet walls were already early introduced; for the three rooms thus formed bore wainscotings of the 17th century. In the third story of the front house was the dwelling of the family, whose largest room had the extremely beautiful wainscotings, that is now found in the Germanic Museum. The two smaller rooms served as sleeping chambers; the room beside the stairway may have been the original kitchen, so that the table may also have been set there in the hall. The rear house was also conn-

connected in this story by a light gallery, and it remained to the last as a single wareroom with a wooden post at the centre. So far the beams lie the shortest way in the front and rear buildings. In the uppermost story they lie lengthwise and in front are supported by two girders, in the rear house by a single one. A connection between front and rear buildings no longer exists in this 4th story; the girders are weak, and thus it appears, unless a very great transformation occurred, as if walls were originally arranged in the rear house, rooms being found there for the employees. Also in the front house, the two rooms next the street must originally have been the dwelling of the children. The attic has five stories in the front and four in the rear house; yet only three were used as storerooms. Hoists from the street for the front house and from the court for the rear house are indeed later, but are merely the successors of the earlier ones; for by hoisting the goods injuries must occur to the apparatus, which then made frequent renewals necessary.

In contrast to the Merchant's House in Cologne, in Nuremberg, where all the merchants' houses lay on wide streets, the goods could be hoisted from the street without disturbing traffic. But a contrast to that in Cologne also consists in the utilizing of the roof, that was built as high as possible, and therefore the gable was not across the narrow end, as would have been natural, but on the longer side. Men required in Nuremberg more storerooms in the house, since there great public warehouses could not receive a part of the goods.

The external architecture of one example is the simplest conceivable, like such houses in general. The facades are entirely of plain stone, both next the court as toward the street, and indeed of those extending through the entire thickness of the walls, there merely of headers. The doorways and windows are simply cut out of these walls, excepting that the facade also exhibits merely a projecting cornice. Only the simply profiled main cornice, on which are generally laid three to five courses of bricks, terminates the facade. The horizontal rafters of the roof project beyond this. The entrance gateway is enclosed by a somewhat richer moulding; the windows are di-

case. The gable walls and eave walls between two neighbors are built of brick.

184. Other houses in Rotterdam.

Just like the house mentioned here, the others also stood a little way back from the street, with a garden in front. The view, making a particularly fine effect on the general and the background. Sometimes a graceful little arch projects from the surface; sometimes a corner stands a figure of a canopy; sometimes the roof is enriched by additions of its own as in the house shown, that is, it is all covered by the outline of the entire mass. Especially valuable for the animation of the street view is it, that in medieval cities one house commonly projected so far beyond the next house, that at still one or even several windows could be enjoyed at the side, as may be seen on the adjacent street. In the second story as there a window and a little tower; in the third story are placed two windows. In the fourth story is but one, but there is a recess in the wall of the hall, and a view towards the street window, which permits from the hall a view towards the street. There also projected a portion of the front gable at the neighboring house, and the enriched architecture of the lower part of the street. The lower part of the projection of the house was built of brick as far as to the extent of the cornice, corresponding to the facade; but in reference to the brick masonry, that being separated from the rest of the masonry, and brickwork became common from that of the neighbor, and brickwork became common to this gable. It was built with piers closely adhering to the north German style, between which the plastered recesses, now openings so far as they project above the roof, with the same style as the other houses. The gable, we give it the name of the house, and the gable is the best representative of the house, as far as we know, as being the best representative of the house.

divided into two parts by vertical mullions, are merely treated with a cove. Stone crosses do not occur with the low heights of stories in Nuremberg, only divisions by vertical mullions. The gable walls and party walls between two neighbors are built of bricks.

154. Other Houses in Nuremberg.

Just like the house mentioned here, the others also stood plain and upright on the streets, without therefore appearing eccentric; for here and there a charming addition enlivens the view, making a particularly fine effect on the general and quiet background. Sometimes a graceful little apse projects from the surface; sometimes at a corner stands a figure beneath a canopy; sometimes is the roof enriched by additions at its corner or on its broad surfaces, that first of all improve the outline of the entire mass. Especially valuable for the animation of the street view is it, that in mediaeval cities one house commonly projected so far beyond the next house, that still one or even several windows could be arranged at the side, as may be seen on the adjacent Plate. In the second story is there a window and a little apse; in the third story are placed two windows. In the fourth story is but one, but there is a recess in the wall of the hall, that makes possible a slot window, which permits from the hall a view toward the street. There also projected a portion of the great gable over the neighboring house, and the animated architecture of this gable uncommonly improved the street. The lower part of the projection of the house was built of ashlar as far as to the height of the cornice, corresponding to the facade; but in reference to the brick masonry, that behind separated the house from that of the neighbor, and brickwork became common for this gable. It was built with piers closely adhering to the north German style, between which are plastered recesses, that show openings so far as they project above the roof, with connections above and extending from pier to pier, so that here also again appears the stepped gable. Since the example selected by us no longer retains its ancient gable, we give in Fig. 178 that of the house adjoining the City Hall in Theresienstrasse, so far as we know, as being the best preserved among the

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many mutilated ones remaining, that also still show the painting of the plastered recesses with red and black joints on a white ground.

155. The Schad House in Ulm.

Likewise consisting of a front and a rear transverse house is the Schad House in the Hirschgasse in Ulm. (Fig. 179 ¹⁵¹). But a number of additions are connected therewith, characterized by the later date of its erection and also by the higher rank of its merchant owner.

Note 151. From Gurlitt, G. Historische Städtebilder. Ulm. Berlin. No date.

The massive vaulted corridor of the house is wide enough to receive the straight stairway ascending to the upper story beside the passage to the court; on the right and left of it lie vaulted warerooms, and the writing room of the owner projects into the court like a bay window. The court is enclosed by wings on right and left, which contained stables and other subordinate rooms; wooden galleries in two stories extend along these and connect the front building with the transverse wing in the court. This contains in the ground story again a massive vaulted hall with two piers, that likewise formed a great warehouse. In the upper story the stairway of the front house terminates in a great anteroom, adjoining which are the kitchen on the left and living rooms in front and on the right. The wings alongside the court serve for sleeping rooms and servants; the transverse building contains the great festal hall of the house. From this leads a passage through the corridor beginning on the left to the garden, that extends behind the second court in a somewhat elevated location. Thus in the entire plan the important and brighter side is much more strongly emphasized in comparison to the more mercantile and plainer side of the preceding example, and this important nature is also expressed in the treatment of the whole. The court possesses more richly constructed galleries; a portico with a beautiful fountain, added in 1627, adjoins it in the rear; likewise the anteroom of the upper story still retains its beautiful paneled ceiling. Already standing in the Renaissance period, the whole forms a closing member of the evolution from the sim-

simple conditions of the citizens.

156. House Types on the Basis of several Floors.

These already very extended south German house types also according to the preceding are clearly to be derived from the ancient German hall-like house of a single room. But besides them occur in the extreme south, southwest and southeast Germany a series of house forms, that do not permit such a derivation. These are buildings, whose irregular division of the interior avoids all reminiscences of the ancient type of the great hall. Their location on the frontier and the fact, that they almost entirely belong to a later time, permits the conclusion, that we may refer them to the influence of foreign house forms. As a model for them served in the south and southeast the house of the Alpine lands, that in the high mountains, more withdrawn from direct German influence, permanently retained the antique tradition of a plan containing several rooms. As an example of its architectural style may be compared the small nobleman's seat near Klausen described in Art. 84. In the southwest and especially in Alsace may it be assumed indeed, that the smaller French castles and manor houses exerted an influence upon the building customs of the well to do citizens. Opportunity for employing skilled artisans was so abundant, that men were accustomed in their picturesque little cities, so charmingly located on the vine-crowned hills of the Vosges mountains, to erect houses for themselves, that occupied a middle place between a nobleman's seat, the house of a well to do vine cultivator, and the city style of building.

157. House at Reichenweier.

From the remains of ancient domestic magnificence over abundant in the little city of Reichenweier, we bring as an example such a dwelling in Figs. 180 to 182.¹⁵² After the manner of a nobleman's court, it is separated from the street by a court enclosed by a high wall; but its lower story served entirely for the business of wine culture, as it contains only two rooms; a cellar hall with a wide archway and a cellar, such as frequently occur in Alsace as fermenting and storerooms for wine, slightly or not at all sunk in the earth. They correspond indeed to the idea of the ancient cellar, but scarcely to

what we elsewhere understand by a cellar. From the cellar hall one ascends by a winding stairway of stone, a regularly occurring appendage of these houses, to the upper story, in which kitchen and chambers adjoin a small corridor. The main room with a bay window has a finely paneled ceiling. On the exterior prevails a plain treatment of the forms; only plain mouldings and simple windows with cross bars animate the surfaces. Yet a pleasing effect is produced by the fresh alternation of the various openings and the projection of the stairway tower and the bay windows with small outlay for forms. For the stairway tower we have assumed in our drawing a crowning by a tile roof, corresponding to the plain treatment of the whole. Besides such solutions for these are also found the arrangement of a small terrace enclosed by a graceful tracery balustrade.

Note 152. From my own drawing.

158. Sufo House at Ueberlingen.

Farther south in the extreme corner of the present German empire the so-called Sufo House in Ueberlingen forms a very ancient example of this kind. (Figs. 183 to 185). Whether it actually was the habitation of the learned mystic Sufo, living in the first half of the 14th century, may be uncertain, in spite of a local tradition. The detail forms of the stone facade wall lying next the street afford no very assured basis for determining the date of its origin; in any case the building belongs by its age and the peculiarity of its plan to the most notable dwellings of the German middle ages. Aside from the many additions and restorations of recent times, there results a tolerably simple ground plan.

In the ground story one enters through a round-arched doorway surrounded by a fine cavetto, above which is placed a representation of the Crucifixion, into a hall paved with stone slabs. In it the hearth lies in the rear, in the middle of the floor is a trapdoor for entrance to the cellar; at the left of the entrance doorway a stairway leads to the upper story; in the right hall a round-arched doorway opens into the chief room of the house, a chamber about 14.8 by 22.0 ft. Another small room adjoins the rear wall of the entrance hall; it is not impossible, that its projection beyond the line of the

extends about one story lower than the left facade, and
surrounds important alterations in later times. Also
the enclosure of this projecting room, all walls are
in masonry of considerable thickness. On the contrary in the
lower story only the front and side stone walls of stone;
and is stable half timber work, especially effective
the good joining of the different parts. Also there are an
or hall joining the stairs and also contains the fireplace,
very close next the front wall. From the niche in which it
is found, a small opening for passing the food extends in
the adjacent room, which we must then consider a dining
two other corners right at the rear. The whole forms a
comfortable dwelling, in which lived only the very low story
lives in connection to our western views.

183. House in Bern.

Since the present house in Bern, there are no remains of the
183 to 185. The house belongs to the city, and according to
several documents accordingly their original structure by a
stone masonry passage, and thereby created the most
is flooring, in which also traffic and business might be
and, protected by heat of sun or rainy weather, as well as
the gay passage of the preceding important world.

2. Bern. Bern. To date.

Thus likewise in the ground story of our house extends
various passage on massive stone, at whose rear wall over the
also rooms, of which we certainly do not know whether they
were had the existing form. Because the rooms on the right
with the present house entrance formerly composed a great
range hall, from which the stairs and workrooms were to be
opened at the rear of the building, to the upper stories. In
as only a small corridor joining the stairway; all else is
filled for the use of a spacious living room, and the kitchen
is placed in the right corner at the rear. From this the

large room may have resulted from a later rebuilding, since the entire rear side of the house, that on the sloping site extends about one story lower than the old main facade, has experienced important alterations in later times. Aside from the enclosure of this projecting room, all walls are erected in masonry of considerable thickness. On the contrary in the upper story only the front and gable alone were of stone; all else is simple half timber work, externally effective only by the good joining of the different parts. Also here an entrance hall adjoins the stairs and also contains the fireplace, here placed next the front wall. From the niche in which it is found, a small opening for passing the food extends into the adjacent room, which we must thus consider a dining room. Two other chambers adjoin at the rear. The whole forms a very comfortable dwelling, in which indeed only the very low story heights of 6.9 ft. in both upper and ground stories appear striking in comparison to our modern views.

159. House in Berne.

Perhaps as a continuation of the data here given may be regarded the stately House in Berne, that we reproduce in Figs. 169 186 to 188.¹⁵³ Berne belongs to the cities, that according to southern prototypes accompany their principal streets by continuous vaulted passages, and thereby created the most suitable locality, in which also traffic and business might be pursued, undisturbed by heat of sun or rainy weather, as well as the gay passage of the promenading important world.

Note 153. From Gurlitt, G. Historisches Städtebilder. p. 3. Bern. Berlin. No date.

Thus likewise in the ground story of our house extends the vaulted passage on massive piers, at whose rear wall open two shop rooms, of which we certainly do not know whether they always had the existing form. Probably the rooms on the right with the present house entrance formerly composed a great entrance hall, from which the shops and workshops were to be reached at the rear of the stairway to the upper stories. In this is only a small corridor adjoins the stairway; all else is utilized for the plan of a spacious living room, and the kitchen is placed in the right corner at the rear. From this the usual

open passage extends to the privy located in the rear angle of the court. The whole is so arranged, that each story might very well by itself form a separate dwelling, and since here could not be considered the use of the upper story for storage purposes, as we found common in north Germany, the house may thus have belonged with those not owning a dwelling. The exterior of the house is generally plain and made a simple impression, since still instead of the great modern windows smaller light openings appear in the upper parts of the wall. But by the addition of the effective bay window with the rich blind tracery ornament of its walls and its very developed corbelling, in combination with its widely projecting eaves of the roof, it strongly advances from the row of its neighbors and produces the expression of comfort and wealth.

160. Small House in Regensburg.

Few German cities have retained so many remains of mediaeval architecture as the very ancient Regensburg, that also after its first period of splendor, in which it was the imperial capital under the last Carolingians, still maintained its paramount importance as an ecclesiastical, commercial and political centre of Bavaria during the entire middle ages against much younger Munich. Also after the numerous losses, the most recent times have brought to the existing condition of old dwellings, losses with which are to be reckoned the rebuilding of the old family residence of the Thundorfer family, known under the name of "Goliath's House", yet in the narrow alleys of the interior of the city besides so many remains of the Romanesque period, numerous dwellings in Gothic style have endured through numerous burnings of the city, thanks to the stone construction employed throughout on them. Unfortunately just the largest and most important of these buildings are so changed in the interior, that their ancient plans are scarcely longer to be recognized. Fig. 189 ¹⁵⁴ gives the ground story plan of one of the smaller houses, located at the corner of the Fischmarkt and of the Kahlerstrasse.

Note 154. From my own drawing.

It shows the plan of a wide vaulted entrance hall with a larger room beside it, likewise covered by ribbed vaults. The o-

open stairway winds around to the upper story in the angle of the court; only from that is it placed in the interior of the building. The upper stories are three in number, and each contains a small anteroom, that received the before mentioned stairway, and in size corresponds to the rear bay of the vault of the larger room in the ground story. Three rooms nearly correspond to the remaining three vaulted bays of the ground story and adjoin this. From the rear room in the second story a passage again leads to the privy located in the angle of the court. The court gable of this house with its upper stepped termination and a window lintel decorated by a cusped arch in the top story are well preserved; otherwise the entire exterior of the house is greatly changed.

179 161. Roritzer House in Regensburg.

In order to present for Regensburg the characteristic mode of treatment of the architecture, we give in Fig. 190 ¹⁵⁴ the exterior of the house, that belonged to the cathedral architect Wolfgang Roritzer, and which was probably constructed by him rebuilding two or three old houses on a larger and tolerably developed ground plan. The external walls rise with plain surfaces; the simply cut windows for the needs of the stories for living are arranged in several groups by cornices above them; as prominent decorations serve the windows of the attic subdivided by small columns. The stepped gable of the left portion of the house finds its continuation in a battlemented termination of the wall of the house, behind which is concealed a shed roof sloping to the rear.

162. Houses at Passau and Steyr.

In a different manner appears further the adherence to southern architectural customs, that we may see in such concealment of the crowning roof, if we descend the Danube further. In Passau, that still possesses a considerable number of vaulted lower stories, similar in kind to that reproduced in Fig. 187, already appear the first simple examples of stone galleries around the court in several stories. This motive is thus developed in the most graceful way in upper Austria, especially in Steyr. There are arranged the lots of the full citizens around the elongated main square of the city in quite imposing widths

and very great depths. Since Steyr arose by means of its famous iron industry and by the medium of the southern traffic coming from the Alps to an important market, these lots were built over with the inclusion of several courts in a frequently extensive way, even to the rear border, that was marked by the slope of the hill or the outer walls of the city. Figs. 191 to 194 ¹⁵⁵ afford an idea of such developed plans.

Note 155. From the publications of the Wiener Bauhütte.

We see how in the ground story the entire front is open in vaulted halls for traffic, and how in all stories are arranged beside each other rooms furnished with vaults or beam ceilings. By different stairways and the columnar galleries of the courts a and b care is taken, that almost every room may be used separately, so that according to need it may be made a storeroom, quarters for traveling peddlers and their servants, or even a living room for the owner. So we may conceive such a house as filled with a varied and noisy life; it combines in itself within small space a dwelling, bazaar and a southern caravanseray. As a special peculiarity of the cities of upper Austria, we also find here a great use made of corbelling. Not only do the galleries around the court in the second and third stories project on corbels; the entire facade projects in this manner like a bay window for the height of two stories. In the interior are constructed heavy and deep piers for the loading of the corbel, between which the front wall is but thin. The windows stand between these piers connected by arches, as if in deep recesses, and they have those masonry seats beside them, which make the rooms so comfortable. In the latest examples have these piers been divided and finally replaced by columnar supports, which in a statically correct manner only load the rear ends of the corbel stones, forming a very rich motive for the subdivision of the interior. Characteristic of the art of these nearly Alpine regions is also the frequent use of heavy vaults and the arrangement of open attics resting on few supports with girders pinned together. One hoisting opening in the lofty and at first vertical gable permits the storage of goods. Above this the roof terminates in hipped form, while it was entirely hipped in the rear, and contained an opening for the little court b.

Similarly arranged and grouped about two internal and very picturesque courts is another House at Steyr, today the offices of the Alpine Mountain Society, whose gabled facade and section are represented in Figs. 195 and 196.¹⁵⁶ The house has but one upper story, that is again corbelled out like a bay window. The architectural style exceeds in boldness that otherwise usual locally, and as seen in the preceding example, since the corbellings and the supporting piers do not coincide, but only straight arches on the wide spans support the window wall of the projecting story. Likewise by the rich blind tracery of the surfaces is the building distinguished above others, and it also contains in the interior in the beautiful doors, the charming stairway and the beautiful courts already mentioned, a great number of refined architectural solutions.

Note 156. Likewise from a publication of the Wiener Bauhütte.

Fig. 163. Citizens' Houses in the Tyrol.

Like these houses in Steyr, so also the citizens' houses in the charming cities of the Tyrol mostly stand on deep and narrow sites, and they attain to a considerable extent by the inclusion of one or more courts. On the exteriors the Tyrolese house architecture is characterized by the preference for the arrangement of porticos, which make the architectural expression of the city so comfortable, and by the inclination to conceal the usual flat shingle roofs behind a horizontal wall, in case it is not permitted to overhang the facade with strongly projecting eaves. The very favorite and numerously employed bay windows then subdivide vertically these rectangular structural masses. Our street view from Sterzing (Fig. 197¹⁵⁷) may afford a representation of the effect produced.

Note 157. From Steffen. Baudenkmäler deutscher Vergangenheit. Vol. 1. Pl. 1. Berlin. No date.

As a special expedient for introducing light into these deep structures without accepting the inconveniences of open courts, there was developed the peculiar design of light courts, that very notable recall the elevated skylight openings, whose germ we find mentioned occasionally in the ancient German halls, and which are also marked as "testudo" on the plan of the Mon-

Monastery of S. Gall. There are large rooms, mostly containing the stairways, located in the interior of the house, and with their external walls extend so high above the roofs, that great arched windows allow an abundance of light to fall to even the ground story.

164. Citizens' Houses in Bohemia.

Similar dwellings containing numerous rooms finally extend northwards even into the border provinces of western Bohemia, where an ancient German tradition did not oppose them. These are there often connected with the eastern custom of street porticos, by which especially the great marketplaces or squares of the cities of German colonists were frequently surrounded. But in the detail forms is there often visible an influence of the very naive and dry picturesque architecture, as preferred in Slavic lands, generally in combination with the influence of the Italian artists already attracted to the northeast by the rulers. Two houses from Wittingam (Figs. 198 to 200 ¹⁵⁸) and Budweis (Fig. 201 ¹⁵⁸) are produced here as examples. The ground plan of the first is characterized from the houses in Steyr by the clear arrangement of the passage in the ground story, but otherwise is based on the like practical tendencies, to arrange the rooms beside each other purely according to the requirements for use. Notable on the exteriors of both houses is the preference for a low inclination of the roof and the sportive use of the forms of military architecture, that we can refer to the influences before mentioned.

Note 158. From Mitt. der K. K. Centralcommission zur Erforschung und Erhaltung der Baudenkmale.

After we have endeavored in the preceding to obtain a survey of the different forms of dwellings, that served the citizens in a narrower sense, i.e., the artisans and merchants, who furnished the "support of the citizens," as said in the middle ages, it is time to turn to the house of that inhabitant of the city, the conditions of whose living were substantially determined by the practice of agriculture. As previously stated, it is certain, that in the beginnings of most German cities all the citizens at first belonged to that class, while by the possession and cultivation of the vacant land, a city settlement co

could be obtained a firm support for during even unfortunate times. But one should not forget, that these agricultural full citizens of a growing city should in nowise be placed on the same plane with the peasants of the surrounding villages. Politically and socially they were elevated above the condition of such by even the small grants of the right of self government; but before all the use of the right to hold markets and to carry on commerce formed for them the chief ground for the settlement, or in the oldest and most slowly increasing cities it was the original cause of their origin.

In the consideration it is further to be deduced, that the founding of new cities in general was not at all according to the custom and uses of the vicinity. Men rather derived regularly the rules relating to the rights and duties of the citizens, the "city rights" or the "city freedom", from an older and frequently far distant settlement.

A foreign contractor, the "locator", undertook for investment with the chief magistracy or other reward, to furnish the newly created city with industrious settlers, often brought from a great distance. All this gives important internal reasons in opposition to the apparent and widely extended assumption, that the city house in its form was directly dependent on the farm houses in its vicinity. This assumption would mean that in the northern provinces, where the Saxon peasant's house prevails, the citizen's house must resemble it in plan, and on the contrary in Southern Germany must be similar to the Frankish type of farm house. From our survey of the so-called "proper" citizens' houses it now follows, that in any case for them cannot be assumed such close relations to the different kinds of farm houses. Not from the peasants' houses varying in different regions, but from the simple form of the hall-like house of a single room are to be derived the house types uniformly occurring in both regions for well to do citizens. The last hope for finding at the first glance such an illuminating principle, at least in part, may be afforded yet by the study of the houses of the agricultural citizens; for it is clear, that it was most natural for these to adhere to the arrangement of rooms in the farm house as a result of like purpose.

But aside from an exception just mentioned and not capable of proof, we there find only deceptions. The examination of the existing buildings teaches us, that in general the houses of agricultural citizens in the later middle ages follow the type of other citizens' houses. It is self evident that some additions are made to their parts. A more or less spacious court is required, on which lie stables and sheds for farming implements, and this court must be accessible by means of a high driveway or a side gateway. But this affects the plan of the house proper very little, actually only so far as that a driveway readily adjoined a great hall in the ground story, but a plan generally common in citizens' houses not used for agricultural purposes, and that also was the ground form for the courts of nobles; stables and other household rooms regularly found places on the court, as shown by Fig. 157. For the produce of agriculture and especially grain, the upper story and attic of the usual citizen's house could be utilized just as well as for the merchant's goods, and we still find in the small cities of middle Germany many citizens' houses of the 15 th and 16 th centuries, in which the upper story is used as a granary as in the ancient times. If this did not suffice, or if with advancing civilization men desired to arrange these upper stories as dwellings, then were also built on the courts special granaries.

167. Houses of Agricultural Citizens at Duderstadt.

A good example, how occasionally an entire city plan was influenced by this arrangement, is afforded by ancient Duderstadt, already mentioned in the year 929. There the nucleus of the little city is formed by a long and broad open space, along w whose sides extend the citizens' houses in well preserved rows, betraying in nothing, not even in great driveways, their connection with agricultural pursuits. But behind the houses deep courts extend to the next street, that yet bears the characteristic name of "Hinterstrasse". On this rear street then rise partly in continuous rows the sheds and barns of the ancient agricultural citizens, and with their great gateways and the usually windowless walls next the street, they produce a very peculiar appearance. (Fig. 202 159).

Note 159. From my own photograph.

178 168. Houses of Agricultural Citizens at Rottweil.

In this and similar ways is the practice of agriculture brought into connection with citizens' and patricians' houses as a rule. But besides we find isolated in some cities of Wurtemberg notable exceptions, how at the end of the middle ages and indeed caused by the increasing scarcity of space, peculiar forms of the house of the agricultural citizen developed. Fig. 203 ¹⁵⁹ represents a house at Rottweil and may make this evident. Similar ones are found in Reutlingen and Esslingen, for example. The entire ground story here serves for agricultural purposes. It is divided into three aisles by rows of posts, like the Saxon farm house, but certainly without thought of any connection therewith. The middle room serves as a great hall for the house and a driveway; on the right and left of it are placed cattle and implements. A winding stairway at the rear of the house leads to the upper stories, that are arranged as usual next a rear hall and contain living rooms. We likewise find here a complete separation of the space used for agricultural purposes from the proper living rooms, thus being a plan entirely different from the well known types of farm houses. This separation of the two groups of rooms appears as a generally valid principle, conforming to the higher culture in the cities as a special and independent fact, separating the house of the citizen from that of the peasant, as remaining to us today.

169. Houses of Agricultural Citizens in Westphalia and on the Weser.

Contrary to this opinion it seems indeed to be expressed, that in Westphalia and on the lower Weser, commencing somewhat above Hörter and near Beverungen, also extending thence occasionally eastward, numerous houses of agricultural citizens are found, that are certainly nearly a variety of the farm houses there. As the sketch in Fig. 204 ¹⁵⁹ shows, these are houses with a hall extending through the entire depth of the house, on the right and left being the rooms with the kitchen, and also frequently with stable rooms. The latter are wanting in the smaller houses. Above these side rooms is found an intermediate story, while the hall extends to the attic floor. For

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Farm houses of entirely similar design, but in which the stables usually lie in front instead of in the rear, are commonly found in the villages of the same region.

However strongly these city houses, especially in the small cities, with the unfailing addition of open areas along the streets for manure and farm implements, resemble Saxon farm houses in their external appearance with gateway and great gable, just as little must one regard them as evidence, that the citizen's house was derived from the Saxon farm house. For the ground plan does not at all correspond to the actual type of the Saxon house, but only to a later derivative, in which is lacking the transverse hall with the hearth opposite the entrance doorway. And the examples remaining almost entirely date from the 17th and 18th centuries, as determined by inscriptions, yet exhibit the form world of the Renaissance almost unchanged. Few still belong to the 16th century, and these likewise exhibit Renaissance forms.

170. Houses at Rinteln and Stadthagen.

Where such an internal arrangement occurs in connection with the earlier form world of Gothic, this is to be referred to a later construction, as on the beautiful House at 290 Brinners-trasse in Rinteln, where the original gateway cuts through the inserted wall of a room, or in the very characteristic houses on Niederstrasse in Stadthagen, of which a view and the plan of one are here given. (Figs. 205, 206 ¹⁸⁰). In their heavy external appearance are they very expressive buildings, certainly erected by very comfortable owners, and aside from Renaissance parts, are indeed to be attributed to the 14th century. Their external expression is such, as if they corresponded to the before mentioned houses of agricultural citizens. While the one on the left has been much rebuilt in modern times, that on the right also possesses a ground plan similar to those buildings, but still a good part of the great ground story is left free from partitions, after the style of the great halls in the citizens' houses previously considered. This was still more the case earlier, for the kitchen was first removed by the present owner from the location of the ancient hearth to its existing place; likewise the stairway found at the rear of

The hall is a large addition, that leads to the water story. A new addition erected in the year 1884 according to the plan of the architect, and the small staircase leading thence were only added in the year 1885, according to an inscription found on a beam of the roof of the hall. If we compare these later additions to the house, we find that the representation of a house in the great hall, in which a little room lies at the left of the entrance, against the rear wall, which built the north; therefore we have seen the first of citizens' houses prevailing in the north German country, characterized as the earlier form of the house.

Note 180. From my own research. To this is then added the observation, that not rarely the houses of agricultural citizens have side rooms on the one side of the hall, in order to represent the conviction, that otherwise in these regions the second form of the citizen's house did not produce the same-idea houses similar to the one seen here, and a much smaller plan, namely the house of the more considerable free with the side room extending to the south end of the hall, and have been developed there. In the city and the country. It is very probable, that the primitive influence in the reversed sense.

Note 181. Of this kind, for example, are the houses of the citizens and farmers, published by me some years since in the book "Die Baukunst der Deutschen".

In the preceding we have come to the conclusion by reason of the examination of the monuments, that for the medieval end of the citizen's house, the type of first houses, as we did not serve as models. And it is not too little to say that it is then first to be added, that we have not yet seen.

the hall is a later addition, that leads to the upper story of a rear addition erected in the year 1624 according to the documents. And the remaining partitions in the intermediate story and the small stairway leading thereto were only added in the year 1625, according to an inscription found on a beam of the room at the right. If we conceive these later additions to be removed, we then have the representation of a house with great hall, in which a little room lies at the left of the entrance, against its rear wall being built the hearth; thereby we have again the form of citizen's house prevailing in entire northern Germany, established as the earlier form of these houses.

Note 160. From my own drawing.

To this is then added the observation, that not rarely these houses of agricultural citizens have side rooms on but one side of the hall,¹⁶¹ in order to strengthen the conviction, that likewise in these regions the ground form of the citizen's house did not produce the three-aisled houses similar to the latter farm houses, but a much simpler plan, namely the house with great hall predominating throughout all northern Germany. The more comfortable type with the side rooms extending the entire depth of the hall may have been developed therefrom in both the city and the country. It is more probable, that the more highly developed cities preceded with such a refinement, and thus may one well assume, that in the similarity of the Westphalian agricultural citizen's house to the house of the small farmer in the vicinity is to be recognized far more as a very late influence of the city upon the country, than as a primitive influence in the reversed sense.

Note 161. Of this kind, for example, are the houses from Blomberg and Hameln, published by me some years since in Schüfer's Die Holzarchitektur Deutschlands. Berlin. 1889.

171. Historical Survey.

In the preceding we have come to the conclusion by reason of examination of the monuments, that for the mediaeval development of the citizen's house, the types of farm houses now known to us did not serve as models. And it is not too difficult to give also the historical reason therefor.

It is then first to be stated, that we have but few starting

...for determining the case of these types of farm houses ... the time, man have come to regard them as a primitive ... The oldest examples known to us date from the 15th ... of the Saxon and Frankish house was already developed, ... about the middle of the 13th century and consisted ... settlement of the regions east of the Elbe. But that the ... are is indicated by many signs. Thus the oldest remains known ... to us of such a house in Gross-Siechen, ¹⁸² that perhaps still ... belongs to the 14th century, by its five-arched plan very ... valuing of city life, the building on the one hand which ... and oldest cities already introduced it about the century ... earlier. In the construction of the remaining German houses ... ents, -- while from early recognized influences by foreign ... forms -- indicates the simple plan with a single room as the ... archaic type of the German citizen's house, then near this li ... as the idea, that in that earliest time of development the ... new form house still added to this simple and old as time ... by force of the previously mentioned custom of building ... and apartments from the oldest cities, and since ... space in the cities quite early became limited and costly, the ... ground form with a single room further remained more clearly ... expressed in the citizen's then in the farmer's house, and the ... further development of existence was necessary by an in ... mode of life, took different paths in the cities and in the c ... country. It necessarily follow these diverse courses have con ... not become one task, on account of the lack of space. For the ... study of the farm house, whose representations entirely belong ... to the period after the middle ages, we must refer to the ex ... native publications of the German, Austrian and Swiss archi ... sectoral and engineering societies, and limit ourselves ... few remarks on the two chief groups. In southern and western ... however, and in the country combined into one structure the ...

points for determining the ages of these types of farm houses. From this by a more intimate knowledge of the conditions of the time, men have come to regard them as a primitive embodiment at least of the epoch of the migration of nations. (See Art. 9). The oldest examples known to us date from the 16th century, and it alone appears determined, that the ground types of the Saxon and Frankish house was already developed, when about the middle of the 12th century was completed the settlement of the regions east of the Elbe. But that the ground plan of the Saxon house now common was not then fixed there is indicated by many signs. Thus the oldest remains known to us of such a house in Gross-Siepen,¹⁶² that perhaps still belongs to the 14th century, by its five-aisled plan very distinctly differs from the usual three-aisled form. But the development of city life, the building on the free ground within the oldest cities already introduced it about two centuries earlier. If the consideration of the remaining German monuments, -- aside from easily recognized influences by foreign forms -- indicates the simple plans with a single room as the archaic type of the German citizen's house, then near this lies the idea, that in that earliest time of development the German farm house still adhered to this simplest and oldest type. By force of the previously mentioned custom of adopting arrangements and experiments from the oldest cities, and since the space in the cities quite early became limited and costly, the ground form with a single room further remained more clearly expressed in the citizen's than in the farmer's house, and the further development of existence made necessary by an improved mode of life, took different paths in the cities and in the country. To separately follow these diverse courses here cannot become our task, on account of the lack of space. For the study of the farm house, whose representations entirely belong to the period after the middle ages, we must refer to the exhaustive publications of the German, Austrian and Swiss architectural and engineering societies, and limit ourselves to a few remarks on the two chief groups. In southern and western Germany, men in the country combined into one structure the main house containing the hearth, the sleeping rooms and the

stable, when the two latter were added beside the former, thus cheating the well known type of the Frankish farmer's house. In the cities was secured the space desired for a more comfortable life by the arrangement of an upper story, whose development from the undivided "summer house" into the chief story for living rooms and furnished with a hearth, we can follow in the preceding examples, as well as its increase to the number of two or three stories.

Note 162. See Benkmalpflege. 1905. p. 49.

In the north accustomed to a ruder mode of living, men longer adhered to the old scheme of the spacious hall. In the country, men combined with the latter the stalls for the cattle without separating these by walls. Thereby resulted the ground type of the Saxon farm house, that consisted of the longitudinal hall with stalls along both sides and the transverse hall with the house hearth, and in this form -- without the later chambers developed as more important living rooms -- the citizen could not be actually induced to imitate it. In the cities was no opportunity for a triple division of the hall on account of the few cattle kept. It was at first left substantially undivided, and only separate and strictly isolated rooms were built within it. One or more upper stories were indeed added, mostly not for living purposes but for storing in them the products of farming or other commercial goods. How the separation of distinct rooms also increased here, until but slight fragments of the old wall remained, or indeed entirely disappeared, we have likewise shown by characteristic examples.

But besides the use of such space economizing inserted rooms, men preferred for important houses the effect of the great hall, corresponding to the hall in English country seats, far beyond the time treated in our description, accepting therewith the disadvantages and inconveniences of such a side room. The well preserved wholesale houses of old Lübeck with their great halls descending into the Rococo period on the one hand, and on the other hand the changed and essentially richer form of the so-called Leibnitz House in Hanover, as an example from the middle of the 17th century, show with what power the basal

idea of ancient German house architecture maintained itself in the 19th century, when more and more houses were built in the old style.

THE CITY HALL

1. City Halls.

178. Earliest Occurrence of City Halls.

The need for erecting public and non-ecclesiastical buildings developed but gradually in the middle ages; complex arrangements for administration, for which shelter must be created, no longer existed after the down fall of the ancient order. Had- as the influence of the national question of victorious Germany. In this respect first come impulses from the rising cities and from their civic self-administration. It soon became necessary to care, both for the commerce as well as for the common good, for the right relation to the state. The government of the area of the city or the judicial staff, roads and fortifications etc. Of arrangements for facilities like the market square, the earliest evidence to have been the erection of open hall structures on the market place. These were mentioned in certain German cities already in the 12th century, and were known as *Markthallen* or *Markthäuser*. At the same time as such market halls were also erected in other cities the existence of a house of the citizens or a city hall, first in the year 1180 in Soest, then a building with hall space for assembly of the citizens in 1212 in Münster. This necessity at the beginning these two purposes were combined in one and sometimes the other, as in the different countries one and sometimes the other, subject the precedence in architectural provision. In the 13th century the *Markthallen* of the 12th century were replaced by the *Rathhäuser* or *Rathhäu- ser* of the 13th century in the form of a *Rathhaus*. The already soon was developed a form intended in common for the further treatment of buildings for city halls. The hall had the room of the merchant and of the citizens, and by the end of the 14th century the *Rathhaus* had become the *Rathhaus*.

idea of ancient German house architecture maintained itself in north Germany, even under entirely changed conditions of living.

c. Public Buildings.

1. City Halls.

172. Earliest Occurrence of City Halls.

The need for erecting public and non-ecclesiastical buildings developed but gradually in the middle ages; complex arrangements for administration, for which shelter must be created, no longer existed after the down fall of the ancient order. Under the influence of the national custom of victorious Germans, there prevailed everywhere the habit of holding popular assemblies, sittings of courts etc., under the open sky. Likewise in this respect first come impulses from the rising cities and from their civic self-administration. It soon became necessary to care, both for the commerce as well as for the common business, for the rights belonging to the citizens; this is the government of the area of the city or the public weal, maintenance of streets and regulation of the markets, keeping up roads and fortifications etc.¹⁶³ Of arrangements for facilitating the market traffic, the earliest appears to have been the erection of open hall structures on the market place. They were mentioned in certain German cities already in the 12th century, and were perhaps known still earlier in Italy and France. At the same time as such market halls was also mentioned in other cities the existence of a house of the citizens or a city hall, first in the year 1120 in Soest, thus a building, that could serve for assemblies of the citizens or their representatives. Thus appear at the beginning these two purposes, commerce and administration, each preserved by itself, for which in the different countries one and sometimes the other required the precedence in architectural provision. Particularly were the assemblies of the citizens commonly held on the court of the ruler of the city or in the rooms of a monastery. But already soon was developed a form intended in common for both requirements, and a basis was permanently produced for the further treatment of buildings for city halls. Men combined the rooms of the merchant and of the citizens' hall or the city hall serving for both uses, into one building containing

a hall, in which regularly the market traffic occupied permanently the lower story, the upper story receiving the assembly of the citizens. Furthermore this upper hall could also be utilized for so many other common uses, as a festal hall for the citizens etc.

Note 163. A rather thorough, but still comprehensive survey of the development of the mediaeval city government and a richer collection of old examples have been given in Stiehl's Das deutsche Rathaus des Mittelalters (Leipzig, 1905), to which reference may here be made.

173. City Hall at Gelnhausen.

In the most primitive manner is this simple form embodied in the oldest city hall remaining in Germany, that at Gelnhausen. (Figs. 207, 208 ¹⁶⁴). It lies on sloping ground and to equalize this is furnished with a high substructure, that as a terrace projected 13.1 ft. from the lower story of the hall, and which was well suited as a place for addresses by the council or for the public city court. Otherwise the building only contained the two halls mentioned, the upper one of these being accessible by a flight of steps added at the end, but was at first reached by an internal winding stairway in the 15 th century. Both halls had fireplaces at the rear wall; their openings for light were still in nowise arranged for closure by glass or wooden shutters. One may regard the hall as an intermediate step in the course of progress, that leads from the southern custom of an open hall structure to the design of enclosed and glazed halls. These later became common in the north for obvious reasons; but frequently the lower room for merchants opened at one side into a portico. In this then usually occurred the sittings of the courts, in which the ancient custom of meeting under the open sky was retained longer than for other public assemblies, and this occurred rather, if the citizens succeeded in obtaining the jurisdiction not belonging to them at first, by money or other services in their power. On the contrary in Italy the most complete change of the lower story into a portico with supporting piers or columns was a great favorite. And just this simplest form of the city hall, consisting of a lower portico open externally and an up-

...not enclosed and there remained as the work of city hall
even important offices. The representation of the city hall
...afford a view of the richness and of the
...to which it was raised. (Fig. 202-203).
...the illustration of the General City Hall in
...as evidence that this was a hall
...as a residence of the city hall on the
....

Vote 181. From little etc.
Vote 187. From no one etc.
...
...

184. City hall in General City Hall, Trans-Canada.
...not every part of the city hall to be
...as in the other district subject to the empire as
...as to the varied and distant power of the emperor. But
...the nature of the local police and
...to retain in their own hands the rule of the community,
...was based on their own land and soil, owing their
...and to govern in a more, absolute or greater.
...as a rule with the assistance of a committee of
...as at least confined by the lord of the
...and that some really termed magistrates. Where this
...to the city government, the magistrates' house and the hall of
...the citizens as not the basis of the city hall, but it takes
...the form of a small official building, that only needed
...a few rooms of residence and for the citizens of
...magistrates and the foundation of the necessary business
...building. Likewise with it was more frequently connected
...of an open building, houses which the court could
...in public on the ground floor. A very characteristic
...of such a building is the General City Hall at
...the court of justice of different ages. The
...the oldest houses in the district and the
...the most important houses (Fig. 211-212), in which
...and the other side of the street and supported by a
...somewhat later and more likely added in our
...on corners in the ground story the cornice for the

upper enclosed hall there remained as the type of city hall in even important cities. Our representation of the city Hall at piacenza may afford a view of the richness and of the heavy expression, to which it was raised. (Fig. 209 ¹⁶⁵). Contrasted with this is the illustration of the graceful City Hall in Ledbury (Fig. 210 ¹⁶⁶) as evidence that this open form of hall was retained as a reminiscence of the open halls on the market place.

Note 164. From Stiehl etc.

Note 165. From my own photograph.

Note 166. From the Architectural Review. 1889. p. 120. Half Timber Houses in Worcestershire.

174. City Halls in Dependent Cities; Tangermünde.

But not everywhere by far were the citizens left to self government, as in the cities directly subject to the empire as well as to the varying and distant power of the emperor. Rather occurred the endeavor of the lesser princes and masters to retain in their own hands the rule of the community, that was located on their own land and soil, owing them rent and service, and to govern it by mayor, aldermen or judges. This occurred as a rule with the assistance of a committee of citizens, appointed or at least confirmed by the lord of the city, and that were mostly termed magistrates. Where this happened to the city government, the merchants' house and the hall of the citizens is not the basis of the city hall, but it takes the form of a small official building, that only needed to contain a few rooms of moderate extent for the sittings of the magistrates and the transaction of the necessary business in writing. Likewise with it was more frequently connected the plan of an open portico, beneath which the court could be held in public on the market place. A very characteristic example of such a building is the charming City Hall at Tangermünde. It consists of several parts of different ages. (Figs. 212, 213 ¹⁶⁸) The oldest portion is the gabled structure characterized by the most luxuriant tracery (Fig. 211 ¹⁶⁷), in which are found two halls over each other and supported by a middle pier. The somewhat later and more lightly shaded wing in our illustration contains in the ground story the portico for the judges, o

over this being a rectangular room available for sittings or for writing. It also exhibits in simple forms a very characteristic example of the strong north German brick architecture.

Note 167. From Gurlitt, g. Historisches Städtebilder. Stendal - Tangermünde. Berlin. No date.

Note 168. From Stiehl. etc.

175.- City Hall at Ochsenfurt.

Although such a building with most of its rooms, that only served for administrative purposes, already testifies to a tolerably advanced condition of city life, yet it did not suffice for such cities, that had attained to more abundant activity in commerce and manufacturing. For with the blossoming of these two branches of civic pursuits, there arose for the city government an abundance of new problems.

The substitution of financial traffic for the old agriculture, the supervision of manufactures and of the more greatly developed commerce, the collection of gradually introduced taxes and dues of very varied kinds, and also not the least, the more artificially developed warfare required a division of the labor of administration, and occasioned an increased need of space.

For such demands was calculated the City Hall of the little city of Ochsenfurt-o-M (Figs. 214 to 216 ¹⁶⁹), that was erected about 1490 to 1505. Above a lower story, which may have served as an armory and stable, rises the second story upward in Fig. 215, in the main structure consisting of a great hall as an anteroom and a council hall. In a side building added later are arranged two writing rooms, from one of which a small winding stairway leads down to the lower story, and affords the possibility of bringing unseen any prisoners before the council. In the third story (Fig. 216), that occupies only the main building, no less than 5 separate rooms adjoin a smaller hall. The exterior (Fig. 214 ¹⁷⁰) affords a charming example of how with complete adaptation of the architecture to the irregular subdivision of the interior a gracefully animated expression may be produced without disquiet. A high flight of steps with ornamental tracery balustrades, the arms of

the city and a beautiful statue of the Madonna on the angle at the right hand animate the plain surfaces of the two stone lower stories; above them projects boldly the upper story constructed of hal timber work with its imposing clock tower, producing striking shadows.

Note 169. From my own drawing.

Note 170. From a drawing by H.A.O. Müller in Deutsche Bauhütte. 1905.

176. City Hall at Münster-i-W.

For a further development of the civic conditions the hall building of the free citizens also could not remain in the simple form first mentioned; subordinate rooms must be added thereto. For to carry on the administration of the property of the city, to protect the rights of the citizens outside it, and to care for the increasing problems in the interior of the city, the general assembly of the citizens, for which the great hall was created, was not permanently adapted. Men rather chose from themselves a number of prominent citizens, in order that they as the council of the city might carry on the current administration under a burgomaster selected by themselves, while the general assembly of all the citizens, the entire populace, was held only for the most important decisions. Besides the council exercising its powers without remuneration, there further appeared the secretary of the council as a salaried official.

It thus became necessary to provide corresponding rooms for these new members of the administration, and these were usually added at the end of the great hall without changing the rectangular ground form of the structure; mostly in the second, but also occasionally in the ground story.

On the beautiful City Hall at Münster in Westphalia such a still simple ground plan (Fig. 218 ¹⁷¹) is combined with a very rich development of the front gable facade.

Note 171. From Stiehl etc. p. 49.

For the ground plan is it to be noted, that the very large council room here appears as an addition to the older two story design with halls. Already at its erection in the 15 th century it was equipped with a monumental bench for the coun-

council with a richly paneled wall with canopies behind this, and in the Renaissance period by restoration and the addition of further ornamentation was made a remarkable example of its kind. Adjoining it in a separate addition was formerly the office of the secretary of the council, now destroyed. Before the rebuilding, that occurred at the middle of the last century, the hall building formed a two story hall with plane ceiling, which was by far the usual form of such rooms. In the ground story is an open portico on the facade, that was still used for a court in the 17th century. Besides the two great entrances to the market hall, a small doorway on the central axis leads down to the cellar, likewise used for mercantile purposes. Above the four plain arches of its exterior, the facade of the citizens' hall is adorned by splended windows, statues and canopies, likewise arranged on four axes. Over this rises the tall gable in seven divisions, a proud manifestation of civic power in the rich animation of the roof edge-by-tracery windows and figure decoration. With this the practical and material points of view were not neglected; for the plain openings on the middle axis of the gable served as openings for hoisting, and also the vast attic for storage of rental grain, a chief portion of the income from landed estates, or was used as a warehouse for other goods.

Note 172. From Verdier & Cattois. Architecture civile et domestique au moyen-âge et à la Renaissance. Vol. 1. p. 156 et seq. Paris. 1855.

177. Compound Plans.

Besides the plain rectangular form of these buildings, that is very common in simpler or richer development, there elsewhere occurred the related arrangement, that the rooms of the council were in a structure added at the longer side of the hall. Thus the City Hall in Dortmund, whose main building dates from the 13th century, was completed about the year 1400; other fine plans of this kind are found in Jüterbog and Stendal, in Brandenburg, Pirna, Sulzbach etc. We shall find them in a transition state in describing the city halls at Buderstadt and Nuremberg, and therefore omit the representation of a particular example.

still more complex forms are developed, in which the
the balls no increased, that their number was enlarged, on
account of the existing conditions. Then was developed to
in two ball structures of the usual two-story kind at a right
angle in an S-shaped plan, when sometimes the two-story
lines are closed side of the angle was turned toward the open
marked place. The first arrangement is shown by the first
in Brunswick, for example, in a design already noticed by
the situation of the street and other features. For the
and form may be mentioned as an example the picturesque struc-
ture of the City Hall at Salisbury.

178. City Hall at Litchfield.

Another peculiar form was again developed by the relation
ties for the combination of the two hall buildings. Litchfield
for this is the nucleus of the Litchfield City Hall. The
there were erected already in the 18th century the
two-story rectangular structures, so that a three-story space
86.5 ft. wide was left between them. The upper building in
our illustration served as a "closed hall" for the trade in
fabrics, the other instead in the usual manner as a
low and above as a citizens' and "dance hall". Both buildings
as well as the court lying between them had cellars
also for the traffic in and the retailing of wine on the
first scale, carried on by the council. At the beginning of
the 19th century was the whole rebuilt, enclosing the space
between the two buildings by a massive wall with horizontal
masonry. About 50 years later the entire plan was extended
and the rear about 47.5 ft. Then was obtained an entire
and very interesting architectural form by the new walls
and the court, to whose influence is due the city hall.

Note 179. From Still.

Like most city halls of such cities, that attended to his-
torical importance, that of Litchfield has also suffered
From additions of about the year 1800 are the

Still more complex forms are developed, if besides this addition of new rooms, the requirements for the extension of the halls so increased, ~~that~~ their number was enlarged, on account of the extending commerce. Then men preferred to join two hall structures of the usual two story kind at a right angle in an L-shaped plan, when sometimes the open and sometimes the closed side of the angle was turned toward the open market place. The first arrangement is shown by the City Hall in Brunswick, for example, in a design greatly enriched by the addition of the stately two storied portico. For the closed form may be mentioned as an example the picturesque structure of the City Hall at Saalfeld.

178. City Hall at Lübeck.

Another peculiar form was again developed by the Baltic cities for the combination of the two hall buildings. Standard for this is the nucleus of the Lübeck City Hall. (Fig. 219 173). There were erected already in the 13 th century two parallel two story rectangular structures, so that a free space about 32.8 ft. wide was left between them. The upper building in our illustration served as a "cloth hall" for the trade in fabrics, the other indeed in the usual manner as a ~~market~~ below and above as a citizens' and a "dance hall". Both buildings, as well as the court lying between them had cellars beneath for the traffic in and the retailing of wine on the greatest scale, carried on by the council. At the beginning of the 14 th century was the whole rebuilt, enclosing the space between the two buildings by a massive wall with horizontal upper termination extending up to the ridges of the roofs of the halls. About 50 years later the entire plan was extended toward the rear about 45.9 ft. Thus was obtained an enclosed and very imposing architectural form by the high walls enclosing the court, to whose influence is due the city halls of so many Baltic cities, such as Stralsund, Rostock etc.

Note 173. From Stiehl.

Like most city halls of such cities, that attained to historical importance, that of Lübeck has also suffered an entire series of alterations and additions.

Such additions of about the year 1400 are the transverse

well in the ground story of the market, by which this was divided into the smaller room for the market judge and the larger council room, and the open columnar porch of the loggia. From whose upper landing were provided the 6 rooms of the council and of the assembly of the citizens; it may have also been utilized below as a permanent portico. Likewise the rooms lying at the end of the court and between the two main buildings were only added later. In contrast to the main building, which was suffered by the building, when black rose to be the chief place of the House, and the assembly of the representatives of the cities occurred in its ancient structure, as it. This hall building was already extended about the year 1450 by a wing, vaulted on piers below as an open hall, but received above another great hall (only partially represented at the left in our illustration), and this wing was enlarged of the building shown on its exterior the dark color and the strong form treatment of north German brick construction, and faced by particularly careful work, light plastered panels, as well as metal ornaments of different kinds. Thus the medieval building with its intentional accenting of the mass of the structure strikingly expresses the powerful and highly artistic feeling of the old citizens. After in the 16th century period by the addition of ornamental and stone work has been added another and more delicate color in the effect.

179. City Hall at Duderstadt.

In black the problem was solved by an enlargement of the great hall, placed under the influence of the plan of the 16th century, in important rooms also common there. But wherever the endeavor to follow the extension of construction by the actual addition of small rooms. On the City Hall at Duderstadt this led to a very picturesque effect. There was a building with foundation walls dating back in the 14th century, coloring in fig. 280. In the year 1483 this hall was built in Gothic forms, and at the same time an addition made at one of its ends, at the top on the left of a

190 wall in the ground story of the market, by which this was divided into the smaller room for the market judge and the larger council room, and the open columnar portico of the longer side, from whose upper landing were proclaimed the decisions of the council and of the assembly of the citizens; it may have also been utilized below as a judgment portico. Likewise the rooms lying at the end of the court and between the two main buildings were only added later. Important enlargements were suffered by the building, when Lübeck rose to be the chief place of the Hansa, and the assembly of the representatives of the cities occurred in its ancient citizens' hall. This hall building was already extended about the year 1400 by a wing, vaulted on piers below as an open hall, but received above another great hall (only partially represented at the left in our illustration), and this wing was enlarged in 1442 - 1444 by an addition of equal size. All these parts of the building show on its exterior the dark color and the strong form treatment of north German brick construction, animated by particolored heraldic arms, light plastered panels, as well as metal ornaments of different kinds. Thus the mediaeval building with its intentional accenting of the masses of the structure strikingly expresses the powerful and probably ambitious feeling of the old citizens. First in the Renaissance period by the addition of ornamental cut stone work has been added another and more delicate color in the general effect.

179. City Hall at Duderstadt.

In Lübeck the problem was solved by an enlargement of the great hall, indeed under the influence of the plan of the hall in important houses also common there. But elsewhere men endeavored to follow the extension of administration by the gradual addition of small rooms. On the City Hall at Duderstadt this led to a very picturesque effect. There was a hall building with foundation walls dating back in the late Romanesque period. Its enclosing walls are indicated by black coloring in Fig. 220 ¹⁷³. In the year 1432 this hall was rebuilt in Gothic forms, and at the same time an addition was made at one of its ends, at the top on the left of our illus-

illustration. In this was first placed the council room with a small anteroom, as well as a writing room, and further the archives in an intermediate story below. The projecting angle between these two rooms was probably already utilized for the plan of a portico for a judge, but its angle pier was later restored, and the deeply sunk cellar story was used for the important public wine cellar. Thus originated the form of an L-shaped ground plan mentioned in Art. 177, and the whole was still plainly built, even though entirely of ashlar masonry. Only after another century and in the years 1528 - 1533, substantially for artistic reasons, another addition was made to the still free side (Fig. 220, below). This opens in each story by three wide archways as an open portico, and besides contains in each story only a small room, that found in the ground story being explained as the chapel of the council. But over the entire ground area of the building was constructed a half timber structure, partly one and partly two story, treated in the most animated manner by roof bay windows, gables and turrets, that besides its artistic effect had no other purpose, than to create an attic for storage of rental grain. (Fig. 221 ¹⁷⁴). With this ends the mediaeval history of our City Hall; the walls shown in outline in our ground plan indicate additions of the 18 th century.

Note 173. From Stiehl.

Note 174. From Lehmgräbner, P. Mittelalterliche Rathausbauten in Deutschland. I. Fachwerkbauten. p. 77a Pls. 4,5. Berlin. 1905.

180. City Hall in Nuremberg.

The ending of this gradual improvement of the city halls is naturally found in the city halls of the great mediaeval cities, and it will be worth while to likewise present one such at the close of our examination. As one of the most prominent examples, we have selected that of Nuremberg.¹⁷⁵ It differs from the examples previously described, in that it was almost wholly intended for the use of the city administration, and that it served mercantile purposes to but a slight extent. This is explained by an earlier city hall, which in the usual manner fulfilled the requirements of commerce and of the bus-

the business of the council, was entirely abandoned to traffic about the year 1330, and therefore the new building could be arranged chiefly for the use of the council.

Note 175. For the description of the building, besides that given by von Essenwein in the first edition of this Heft, there has been used the publication of E. Hummenhof; Das Rathaus zu Nuremberg. (Nuremberg. 1891).

Local historical investigators have suggested all sorts of conjectures concerning the sudden leaving of the old city hall, before the new building was even commenced. The reason first mentioned by von Essenwein appears to us to have given occasion, that the development of the manufacture in traffic in cloth after the example of the Netherlands required it, and that accordingly a greater space must be freed for the cloth trade. Thus the abandonment of the building falls just at the time, when the most vigorous trade relations with the Netherlands occurred, and the privileges in the Netherlands secured by the Nurembergers were ensured by contracts.

The old city hall and cloth house was only torn down in 1569, and a description written on the occasion represents it as a structure 118 ft. long and but 24 ft. wide, that formed a single hall in the lower story and was divided into two rooms in the upper story. According to the requirements taken into consideration in all city halls of that time, we must assume that one of those rooms in the upper story was the hall of the citizens, the other being probably further subdivided by partitions and containing the additional rooms required for the council, the ground story serving for the cloth traffic. There is nowhere mention of a tower. A cloth hall of the dimensions just given corresponded to the conditions of a small city, but could not satisfy the constantly increasing needs of the city of Nuremberg, so that a change must be made, and since evidently the cloth trade, if not to be taken away from Nuremberg, if it were to assume there even greater importance, could not do with the space assigned to it, since larger stocks of foreign and dutiable cloths must be imported, especially from the Netherlands, so that the council decided to immediately abandon the entire building to the cloth traffic, on-

only a portion of which it had used, to put up with a narrow
 the building was built in the 14th century.
 growing city. As everywhere, the principal part was the
 had a width of 84.9 ft. (or 134.0 x 27.7 ft. inside). This is
 portion built at that time. And since it is not contested,
 fact even then other rooms were also necessary, as for other
 city halls of equally developed cities, then remains only the
 assumption, that they were erected at the same time with it,
 or were provided in other buildings in the vicinity. This is
 is the more probable, since already soon after 1340 works of
 made before the erection of the great Renaissance new
 facade with a passage beneath it, such as still exists at
 the east. The building site obtained in 1348 also comprised
 the smaller court, in which was the flight of steps to the
 hall, without which one could neither reach the hall nor the
 two rooms at the eastern and western sides. A landowner's
 building soon after 1340; for then the building of other rooms
 ground plan (figs. 282, 283) show this oldest portion in fi-
 work; the division walls in the north still exist, while the
 second part to the line W-C is that landowner's house, in-
 stead of which buildings were erected in the 14th century.
 The Nuremberg City Hall never possessed a tower, like most
 in Germany. The other buildings adjoining the hall on the e-
 that they were entirely rebuilt by Hans Behm in 1500 - 1517.
 both internally and externally and were also enlarged. From
 the transactions relating to the rebuilding of the other
 rooms, we learn that similar rooms previously existed.
 This rebuilding relates to the erection of new stories on
 been purchased, and their entirely new internal construction

only a portion of which it had used, to put up with a makeshift for a short time, and to build a new city hall.

This was then arranged in dimensions corresponding to the growing city. As everywhere, the principal part was the great hall building, which for a length of 141.1 ft. externally had a width of 34.3 ft. (Or 128.0×27.7 ft. inside). This is 195 indeed the only portion remaining from the rebuilding period; reason sufficient for many to decide, that it was the only portion built at that time. But since it is not contested, that even then other rooms were also necessary, as for other city halls of equally developed cities, then remains only the assumption, that they were erected at the same time with it, or were provided in older buildings in the vicinity. This is the more probable, since already soon after 1340 works of maintenance in an adjacent house were mentioned. Also drawings made before the erection of the great Renaissance new building show on the west side of the city hall a similar structure with a passage beneath it, such as still exists at the east. The building site obtained in 1332 also comprised the smaller court, in which was the flight of steps to the hall, without which one could neither reach the hall nor the two rooms at the eastern and western sides. A landowner's house must also have been purchased in the 14 th century and 196 indeed soon after 1340; for then the building of other rooms first became possible, that are already mentioned early. Our ground plans (Figs. 222, 223) show this oldest portion in black; the division walls in the north still exist, while the second part to the line N M O is that landowner's house, instead of which buildings were erected in the 14 th century. The Nuremberg City Hall never possessed a tower, like most in Germany. The other buildings adjoining the hall on the east had become so inadequate at the close of the century, that they were entirely rebuilt by Hans Behaim in 1500 - 1515, both internally and externally and were also enlarged. From the transactions relating to the rebuilding of the different rooms, we learn that similar rooms previously existed.

This rebuilding relates to the erection of new stories on the two houses adjoining the council room, that had already been purchased, and their entirely new internal construction,

and further to an extension of the council room by a projection toward the alley. Although the whole was only a patchwork according to the originator's own statement, then originated the splendid new facade of the council room (Fig. 226), together with the charming bay corbelled out in the court and a multitude of spirited details on the stairway and the vaults of the interior.

The hall building of the 14 th century was not changed in its nucleus, although much ornamentation occurred; only the rebuilding of the 17 th century cut off the western portion. The hall represents a further advance in the development of hall construction for Germany, since the previously common two story arrangement was dropped, and the ground story became a mere substructure.

The latter is quite low and is divided into two rows of cells, that served for trade purposes, indeed at first for the cloth traffic. But under these cells in the cellar are also found cells, the famous prison dungeons. The hall itself (s (see section in Fig. 225 and the gable facade in Fig. 224 ¹⁷⁶) has plain enclosing walls without architectural subdivision; the eastern side has a little apse between two tracery windows with pointed arches and a great round-arched window above it. The eastern and longer side shows 10 such windows at equal distances, while two are cut off with the western side, that once had 3 windows and a rosette over them. On the northern side are found 3 entrances, the middle one with a stairway built by Behaim and leading from below, indeed an imitation of the stairway of the 14 th century, that led directly from the court of the city hall, the continuation of the market place directly to the hall; the other two connected the rooms on the east and west sides of the court with the hall. The framework of the roof yet remains and exhibits the ordinary construction then usual for wooden tunnel vaults; but it formerly had tiebeams extending free in the hall, on account of the great span. These were first replaced in the 17 th century by the still existing iron tierods.

Note 176. From von Essenwein's attempt at a restoration of the original condition.

G in Fig. 288 is the great hall; K was the council room, which at the beginning of the 13th century was enlarged; the area G is the room for administration of justice; into K and B were open passages, so that the court B extended to the altar at each end, thus being equally open and accessible. In it the stairway A leads down as the only ascent to the hall, while the stairway L extends down to the basement, where still well preserved plan and arrangement of the hall, which it still occupies to this day.

In Fig. 288 A is the tower chamber; B are separate punishment cells; C are ordinary cells for sickle-bearing; D are rooms for the kitchen, the smith's shop, a bath etc.; E are entrance to F, a subdivision or network of passages. None of the cells has even the least direct light; only through the openings in the doors could a little light enter the cells from the passage lighted by light shafts. The part on the left of the observation in Fig. 288 and 289 is shown in its later arrangement, in which the heavier shaded portions are those of the main building of 1205 - 1210, those lightly shaded being those of the 17th century.

3. Great Public Buildings.

In all cities indeed was the city hall the most important public building, and for small communities was its only one. In the larger and richer cities occurred also a number of public buildings besides the city hall, that partly served for the offices that appear as centres of the wholesale trade, their needs for space so increased, that to confine them to the single existing merchants' hall was impossible. In many cases the old hall was so enlarged, that a new one was not required. Thus for the D-shaped plans mentioned in Art. 177 and for the buildings following the block plan but the two purposes were often entirely separated. For as the old city hall was retained as purely a building for administrative purposes, and a new merchants' hall was erected

G in Fig. 223 is the great hall; K was the council room, which at the beginning of the 16th century was enlarged by the area Q; L is the room for administration of taxes; beneath K and L were open passages, so that the court H extended to the alleys at each end, thus being entirely open and accessible. In it the stairway Q leads upward as the only ascent to the hall, while the stairway J extends down to the subterranean prisons, whose still well preserved plan and arrangement are very notable, even if philanthropists do not find them worthy of imitation.

In Fig. 222 A is the torture chamber; B are separate punishment cells; C are ordinary cells for safekeeping; D are rooms for the kitchen, the smith's shop, a bath etc.; E are entrances to F, a subdivision or network of passages. None of the cells has even the least direct light; only through the openings in the doors could a little light enter the cells from the passage lighted by light shafts. The part on the left of the observer in Figs. 222 and 223 is shown in its later arrangement, in which the heavier shaded portions are those of Behaim's buildings of 1502 - 1515, these lightly hatched being those of the 17th century.

2. Other Public Buildings.

181. Merchants' Halls.

In all cities indeed was the city hall the most important public building, and for small communities was it sufficient for all community purposes, even in its simplest form. But in the larger and richer cities occurred also a number of public buildings besides the city hall, that partly served for trade purposes, partly for schools and the care of the sick.

For the cities that appear as centres of the wholesale traffic, their needs for space so increased, that to confine them to the single existing merchants' hall was impossible. In many cases the city hall was so enlarged, that a number of halls was obtained. Thus for the L-shaped plans mentioned in Art. 177 and for the buildings following the Lübeck scheme. But the two purposes were often entirely separated. For either the old city hall was retained as purely a building for administrative purposes, and a new merchants' hall was erected

in another place, as for example in Gelnhausen, or the old building was left entirely to commerce, as in Nuremberg, and a new city hall was built on a different site. The former seems to have been the more usual case. The merchants' hall then generally became a detached two story structure, that entirely corresponded in form to the oldest and simplest city halls, and naturally it was used for large public functions like them.

Such merchants' halls frequently required very considerable dimensions, when men, in accordance with their increasing need of space, gradually and rapidly added one extension after another. Besides the very famous Silk Hall in Valencia,¹⁷⁷, the halls in the Netherlands had the fame of being the largest. They served particularly for the cloth traffic, that of all branches of industrial activity first assumed such extent, that the city hall no longer sufficed for it. The Cloth Hall of Ypres, with which is combined the massive city Belfry, attained the length of 436 ft. in round numbers; it must have been commenced already in the year 1200 by Baldwin of Flanders; its last enlargement indeed followed only in the year 1304. The Hall at Bruges forms a rectangle of 275.6×142.7 ft.; it was begun in 1284 but was not yet finished in 1304; its tower had a total height of more than 351 ft.

Note 177. See Verdier & Gattots. Pl. 173.

Likewise in middle Germany at the close of the 13 th century and in the first half of the 14 th appeared these halls for commerce, particularly for the cloth traffic, which then affected the world. Among the buildings of this kind, the Merchants' Hall at Mentz first occupies our attention.¹⁷⁸. Even if not equal to that in Ypres in dimensions, it was still a large structure, whose plan was a trapezoid 137.8 ft. 1 long, whose wider end measured 68.9 ft. The building was completed in 1313. Unfortunately at the time when Mentz was French, it was torn down; yet Moller made careful drawings of it, and he published these later in his well known work. Figs. 227 and 228 reproduce the plan of the upper story and the elevation of the eastern or wider end.

Note 178. See Moller. Denkmäler der deutschen Baukunst. 4 th edit. by F.N.Hessemer. Vol. 1. Frankfurt. 1854.

...the cross vaults with narrow and nearly profiled ribs rested on low square piers without capitals, pierced by the very regularly executed ribs. In the eastern apse, on the end here shown to us, which is indeed the proper facade, was arranged a rich projecting portal, consisting of the western side was a great doorway, while in the middle of the north side led to the upper story, from which the hall was entered at a. At b was a great opening extended to the floor, that might serve for rotating ladders and bulky goods, as well as for the admission of a temporary lateral entrance, whether as a stairway or as a ramp for riding up into the hall. At c was a small room, that in its form as separated from the hall can hardly be regarded as a chapel, as it is free of the usual features of a chapel, and is in fact a "market masters", i.e., the councilors placed over the market or their assistants, whereas also a room for money exchange. The base of the roof was decorated by an ornamental prominent cornice with angle brackets. When Koller made his drawings in the year 1867, the building bore a low and plain roof. In the view of Mentz by Merian the building may be recognized beside the city hall, and one may see that it had a number of parallel gable roofs, at least five, corresponding to the five divisions of the vaults. The external treatment of the entire building was very simple; only the middle part of the east side and the two windows of its upper story exhibit a striking richness for a German secular building of that period. The battlements of the eastern side even bear figure decorations, with St. Martin, the protecting patron of the city. At Mentz the situation was somewhat different, as the building was already empty in Koller's time, indeed about the year 1867. The situation of the building was then very different, for which it is notable, that even the three battlements were not in present costume, but were in knightly armor; those of Treves and of Cologne had beside them, which was wanting beside that of Mentz.

Both stories were arranged alike and were each vaulted in three aisles; the cross vaults with narrow and sharply profiled ribs rested on low square piers without capitals, pierced by the very regularly arranged ribs. In the ground story on the end here shown to us, which is indeed the proper facade, was arranged a rich projecting portal, opposite which on the western side was a great doorway, while in the middle of both larger sides were small doorways. An external stairway on the north side led to the upper story, from which the hall was entered at a. At b was a great opening extending to the floor, that might serve for hoisting large and bulky goods, as well as for the addition of a temporary festal entrance a, whether as a stairway or as a ramp for riding up into the hall. At c was a small room, that in its form as separated from the hall can hardly be regarded as a chapel, as it is frequently explained. We might rather see in it a room for the "market masters", i.e., the councillors placed over the market or their assistants, perhaps also a room for money changing. The base of the roof was decorated by an ornamental battlement cornice with angle turrets. When Moller made his drawings in the year 1805, the building bore a low and plain roof. In the view of Mentz by Merian the building may be recognized beside the city hall, and one may see that it had a number of parallel gable roofs, at least five, corresponding to the five divisions of the vaults. The external treatment of the entire building was very simple; only the middle part of the east side and the two windows of its upper story exhibit a striking richness for a German secular building of that period. The battlements of the eastern side even bear figure decorations, with S. Martin, the protecting patron of the city of Mentz at the middle and on horseback. In the panels, that were already empty in Moller's time, indeed stood the other patrons, S. Stephen and S. Albion, and then in 8 other panels were the figures of the emperor and the seven elector-princes, for which it is notable, that even the three ecclesiastics were not in priestly costume, but were represented in knightly armor; those of Treves and of Cologne had mitres beside them, which was wanting beside that of Mentz.

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183. Merchants' Hall Gürzenich at Cologne.

Likewise in Cologne the hall structure of the City Hall in its limited dimensions of 65.6×27.9 ft. could no longer suffice for the greatly extended commerce. Therefore men decided already at the beginning of the 15th century and directly after the completion of the tower of the City Hall, to erect on the not distant Quatermarket of the Gürzenich, which was begun in 1442. It received in each of the ground and the upper story a hall about 196.9×75.5 ft. (Fig. 229) with the notable story height of about 23.0 ft. To the hall an external straight flight of steps led on the north side; side buildings did not exist. On the contrary for special occasions the house lying on the west side of the Quatermarket and separated by a court, which was then connected with the hall by a wooden bridge, was utilized as a subordinate room. Thus in particular the emperor Frederick III and Maximilian, at festivals given by the city to them, through the opposite house and by a wooden bridge, entered the hall by means of one of the great windows.

Note 179. See Köln und seine Bauten. Cologne. 1888. p. 107 et seq. By Arch. und Ingen. Verein für Niederrhein und Westfalen.

The hall was in two stories, like most of its kind. Nine wooden posts supported the main girder extending lengthwise as well as 9 transverse beams, that divided the hall into 10 bays. The walls were entirely plain; the north side was without windows and only contained the entrance doorway; the other three sides were furnished with great windows with stone crosses in deep recesses. On the eastern and western sides were pilasters corresponding to the row of wooden posts, which are still preserved, as well as the two state rooms on the southern side, on account of which at both sides the original windows were arranged to have but half the width of the others. The otherwise entirely plain hall was richly equipped with hangings and other art works on festal occasions, and it has come down to us in such manner, although it has become somewhat ruinous. It was not high and stately enough for our time, and the mighty impression of its interior did not suffice to

have it from restoration, that was commenced in 1912.

The external treatment of the lower sides was very plain.

now are scarcely seen, while the southern side is on a part-
ow street, and the northern side is next the court, and facing
over. On the contrary the eastern and western sides were in-
sided in a peculiar way; they presented all the conditions
es of the civil architecture of the 15th century in Cologne
and therefore became the prototype of many other buildings.

(Fig. 240). The ground story is plain with great doorways at
each side, between them being 4 windows flanked by stone muf-
fions, that are new. Windows beneath lead canopies stand over
each doorway. In the upper story with an independent ex-
terior arrangement are 8 great windows with stone crosses between
narrow piers, which continue the proportion of the stone

crosses by relief bands and tracery. The outer piers are in-
ter and are further enriched by a window-architectural band. On
each pier and above these bands lies a shield with the arms
of the city, such as its soldiers' horse. The wall above these
windows ends at top in battlements and is likewise covered by
bands; at the angles little columns standing on volute sub-
piers and a small bay window without spire, projecting slightly
beyond the battlements. Corresponding to the two sides of the
wall are two long parallel roofs, between which extended a

gutter on the building. This arrangement of the roof, which
was in its height in very heavy proportions to the lower story-
structure, substantially determined the impression of the build-
ing. It was removed during the restoration, while otherwise
most of the exterior was faithfully restored.

184. Merchants' Hall at Cologne.

Still more extensive and the largest of the kind in Germany
is the Merchants' Hall at Cologne. It again contained two
halls, one above the other, 157.8 x 105.0 ft. in dimensions,
and divided into 3 aisles by two rows of wooden posts.
The aisles are so wide, that recently an iron railway track
has been laid through the middle one, to facilitate the
and shipping of goods; for the lower story still

save it from restoration, that was commenced in 1868. Most fortunately Wiethase has adopted the ancient condition.

The external treatment of the longer sides was very plain, merely a simplification of the systems of the two ends, since they are scarcely seen, while the southern side is on a narrow street, and the northern side is next the court, now built over. On the contrary the eastern and western sides were treated in a peculiar way; they reproduced all the peculiarities of the civic architecture of the 15 th century in Cologne and therefore became the prototype of many other buildings. (Fig. 230). The ground story is plain with great doorways at each side, between them being 4 windows divided by stone mullions, that are new. Figures beneath lead canopies stand over each doorway. In the upper story with an independent axial arrangement are 6 great windows with stone crosses between narrow piers, which continue the architecture of the stone crosses by relief bands and tracery. The outer piers are wider and are further subdivided by a middle vertical band. On each pier and above these bands lies a shield with the arms of the city, such as its soldiers bore. The wall above these windows ends at top in battlements and is likewise covered by bands; at the angles little columns standing on corbels support a small bay window without spire, projecting slightly beyond the battlements. Corresponding to the two aisles of the hall are two long parallel roofs, between which extended a gutter on the building. This arrangement of the roof, which was in its height in very happy proportions to the lower architecture, substantially determined the impression of the building. It was removed during the restoration, while otherwise most of the exterior was faithfully restored.

184. Merchants' Hall at Constance.

Still more extensive and the largest of its kind in Germany is the Merchants' Hall in Constance. It again contained two halls, one above the other, 157.2 × 105.0 ft. in dimensions, and divided into 3 aisles by two rows of wooden posts. The aisles are so wide, that recently an iron railway track has been laid through the middle one, to facilitate the receiving and shipping of goods; for the lower story still serves for

its ancient purpose as a room for sales and storage. In 1810 it was the not very imposing story height of 18.4 to 18.9 ft. The main part of the building was a long narrow hall, whose dimensions were 3.5 ft. by 18.4 ft. The ground story had the considerable dimensions of 3.5 ft. by 18.4 ft. (31.5 sq. ft.). The external architecture is very plain. A staircase in the middle of the building is reached by the building, only on the side closely adjoining the former city walls -- and on that side -- it has been furnished with wooden coping and porticos and side passages, and thus by its greater height it contributed to the defence of the city wall. On the east of this partition in the fortifications, it was mentioned in the preceding part (1st edition, pp. 182, p. 242) of this handbook.

But besides such buildings serving for the wholesale trade of important localities for staples, there are also found other more modest designs of early local importance, mostly intended for a single commercial product, such as shoes, grain, etc. There were also either built detached on the market place, or were satisfied by inserting them in a row of others.

For an example of such a kind is the old market at Westcote, represented in fig. 284. On a deep plot of ground in the ground story a high hall 28.0 ft. wide in the clear. A small flight of steps naturally came led up to the entrance; the wall above is fully opened above by four windows with stone mullions and tracery heads, in order to admit light into the hall as far as possible. In the upper story and in the roof was further obtained storehouses, by means of which its income could be increased.

185. Butchers' Guild Hall at Hildesheim.

A different form of a provision for traffic was preferred in the case of the Butchers' Guild Hall at Hildesheim. The building is a long narrow hall, the interior of which is divided into a series of small rooms by means of

its ancient purpose as a room for sales and storage. In spite of the not very imposing story height of 16.4 to 18.0 ft. for its great extent, the halls make a grand impression by the bold construction of the beam ceilings, whose beams in the ground story have the considerable dimensions of 2.6 ft. (31.5 ins.) square. The external architecture is very plain. A picturesque impression is secured by the building, only because on the side closely adjoining the former city walls -- and on that alone -- it has been furnished with wooden corbelled porticos and angle turrets, and thus by its greater height it contributed to the defense of the city wall. On account of this participation in the fortifications, it was mentioned in the preceding Heft (1 st edition, Fig. 186, p. 243) of this Handbook.

185. Meat market at Münster-i-W.

But besides such buildings serving for the wholesale traffic of important localities for staples, there are also found other more modest designs of purely local importance, mostly intended for a single commercial product, such as shoes, grain, meat, bread etc., affording special places for its sale. These were also either built detached on the market place, or men were satisfied by inserting them in a row of citizens' houses.

For an example of such a kind is the old meat market at Münster in Westphalia represented in Fig. 231.¹⁸⁰ On a deep lot, it forms in the ground story a high hall fully 23.0 ft. wide in the clear. A small flight of steps naturally once led up to the entrance; the wall above is fully opened above by four windows with stone mullions and tracery heads, in order to admit light into the hall as far as possible. In the upper story and in the roof was further obtained storerooms, by the rent of which its income could be increased.

Note 181. From Schüfer, G. Holzarchitektur Deutschlands. Berlin. 1889. (Reconstructed by von Essenwein).

186. Butchers' Guild Hall at Hildesheim.

A different form of a provision for traffic was preferred for the sale of meats, at least in the later middle ages, which easily became troublesome in closed rooms by the odor and

to vessels. It consists in the arrangement of an elevated
platform, along which the sides of the platform were placed
not more as it along a narrow alley. Such most common
call the modern "passage" (passage) and are well known to
it. The platform is a platform, a platform, a platform, a platform
is still well preserved in Newstadt-on-Orla. A middle place
Gulf of Hildesheim, well known for the splendid execution
of its half timber construction, that we represent in Bild.
Fig. 10. It contains in the ground story as the prin-
cipal room a hall in two aisles and nearly 12.7 m. high, the
at its accessible at the ends, and along which on one side are
arranged a row of small stalls -- open both to the hall and
to the street. Over them is found in an intermediate story
another series of smaller rooms, that may have served as of-
fices or workshops. The ground story, from its arrangement being
described the substitution of the ground story, which could be
used as store-rooms to storage of the goods or to storage
...
Whether the upper story was originally subdivided in the
manner here represented, or in particular the "Hildesheim"
i.e. the hall and assembly hall of the Gulf was found
as a question. The hall with probably as seen in the
rooms. And it is very probable, that also this upper
was first placed as an undivided warehouse for retail, as a
being occurred in the same and in the same stories.
...
The need of store-rooms and indeed have been very
necessary cities. This consideration will to the fact,
such goods, such as wine, wool, dried fish, salt and
must be sold in at remarkably great distances. The
the woolen weavers long before the wool for their
only from England, landed across France by the
to. And in every city possessing the right of
the traveling merchant was compelled to offer his
sale for a certain time, unless he were released

by insects. It consists in the arrangement of an elongated court extending from one street to the other through the building, along which the stalls of the butchers were placed on both sides as if along a narrow alley. Such meat markets recall the modern "passage" (bazaar) and are made known to us in Thorn by the documents; a late and quite artless example is still well preserved in Neustadt-on-Orla. A middle place between both forms is occupied by the House of the Butchers' Guild at Hildesheim, well known for the splendid execution of its half timber construction, that we represent in Figs. 233 to 235.¹⁸¹ It contains in the ground story as the principal room a hall in two aisles and nearly 19.7 ft. high, that is accessible at the ends, and along which on one side are arranged a row of small stalls -- open both to the hall and to the street. Over them is found in an intermediate story 204 another series of similar rooms, that may have served as offices or storerooms for smoked meats. The cellar story was covered by three tunnel vaults, from its arrangement being denied the subdivision of the ground story, which could be rented as storerooms to associates of the guild or to strangers.

Whether the upper story was originally subdivided in the manner here represented, or in particular the "drinking room," i.e. the festal and assembly hall of the guild was found there is uncertain. This hall might properly be seen in the larger rooms. But it is very possible, that also this upper story was first planned as an undivided wareroom for rental, as certainly occurred in the third and in the attic stories.

187. Storehouses.

The need of storerooms must indeed have been very great in mediaeval cities. This corresponds well to the fact, that bulk goods, such as wine, wool, dried fish, salt and the like, must be dealt in at remarkably great distances. The Florentine woolen weavers long brought the wool for their famous cloths from England, indeed through France by the overland route. And in every city possessing the right of warehousing, the traveling merchant was compelled to offer his goods for sale for a certain time, unless he were released from this r

by a payment. Therefore besides the extensive attics for storage arranged in the houses of citizens and in public buildings, there were also erected entire buildings wholly for this purpose. A considerable number of such purely storehouses remain in the city of Nordlingen, for example, that still present to us like few others an unchanged representation of the comfortable nature of mediaeval city life.

188. School Buildings.

Substantially from the needs of commerce were also developed the schools of the cities. Arithmetic, reading and writing were needful to the merchant, without other learned additions. Schools with instruction in the German language were therefore founded everywhere by the larger cities, beside the old Latin schools of the monasteries and cathedral foundations. Not much architectural expenditure was certainly necessary for them, since the number of pupils was never very large, and a division into different classes could be omitted. In most cases they were arranged in some existing house. And even if a new school building were erected, it also contained only one or two rooms like halls, as well as some chambers as the living rooms of the teacher, thus not differing essentially from the usual dwelling.

189. Universities.

Very gradually was developed the arrangement of higher schools, of universities. They go back to the learned monastery schools, in which were taught the seven "free arts" (grammar, rhetoric, logic -- the trivium --, as well as arithmetic, geometry, astronomy and music -- the quadrivium). To this was occasionally added Roman or canon law (Pavia, Bologna, Ravenna) or medicine (Montpelier). In important places several such schools were in competition, as in Paris the cathedral school, famous in ancient times, was with the later flourishing schools of S. Genevieve and S. Victor. In such a competition the schools also then called prominent secular instructors, and thereby attracted hundreds or even thousands of students. The Spanish University of Alcala de Henares was attended by 14000 to 15000 students. According to the mediaeval custom, these were gathered into countrymen's societies, and

thus in the beginning of the 13th century was formed the permanent subdivision by "nations", each also comprising the corresponding professors and having its own rector. Fifty years later and first in Paris, the professors withdrew from the nations and united in their faculties, according to their specialties:-- theologians, lawyers and physicians. The nations, weakened by the withdrawal of the instructors, immediately combined in the "university" for harmony in their views, i.e., the unity of all attending the higher school, only comprised in the fourth faculty with a single voice in common.

Important for us are these conditions, that were also determinative in the founding of the German universities, because each faculty had its own lecture halls and its own church. Further since living alone was frequently forbidden to the students, and they were divided by "nations" and collected into common houses, called "bursas" or "colleges", an arrangement that has survived until our days in the colleges of the English universities. And the condition of separation was then increased, since the diversity in the universities increased, after the mendicant Orders of Franciscans and Dominicans had also taken their general competition into the universities. Thus we find scattered in the entire city the houses of the colleges with their halls and bursas, greater or smaller in extent, and which again were special foundations for certain countrymen.

Thus the universities also afford for us a tolerably varied representation of different plans. Soon they were arranged like monasteries, like the College of Cluny in Paris, that contained a cloister with a church, large lecture hall and an anteroom, or the University at Alcala de Henares,¹⁸² whose extensive buildings comprised a considerable number of courts like cloisters. Very much simpler, for example, was the three story rectangular building of the "Red College" at Leipzig,¹⁸³ that in the year 1511 was commenced as a "new bursa", containing chiefly living rooms for the students, besides two halls in the ground story. Examples of pure bursas or living houses for students still remained in Leipzig until recently, buildings of a very simple kind.¹⁸⁴ Likewise the College of S.

Michel at Caen ¹⁸⁵ forms a plain rectangular structure with three lecture halls in each story, besides an added stairway.

Note 182. See Verdier & Cattois. Vol. 2. p. 161 et seq.

Note 183. See Leipzig und seine Bauten. p. 86, 90; -- also Gurlitt, C. Beschreibende Darstellung der älteren Kunstdenkmäler des Königreichs Sachsen. Hefts 17, 18; Stadt Leipzig. p. 250. Dresden. 1895.

Note 184. See the same. Vol. 2. p. 160; -- also Gurlitt, p. 255.

Note 185. See Verdier & Cattois. Vol. 2. p. 163.

190. So-called University at Erfurt.

If the proper instruction and residence buildings of the universities were very variously treated, yet to all these establishments was common the need of a great hall, in which occurred festal assemblies, examinations, disputations and the like were held. There remains to us the Thesis Hall of the University at Orleans, an elongated room, covered by eight cross vaults on three slender octagonal piers,¹⁸⁵ and adorned by rich tracery. As such a festal building or "aula" must we indeed also regard the "Great College" of the so-called University at Erfurt. (Figs. 236, 237 ¹⁸⁶).

Note 186. From my own photograph; -- also Gurlitt, O. Historische Städtebilder. Erfurt. Berlin. No date.

It contains in the upper story a great hall in irregular rectangular form, averaging about 37.0 ft. wide and 104.9 ft. long. At the middle of the longer side is arranged a wide and shallow altar niche; the whole of one end, as a seat for the body of instructors, is developed as a rich and spirited canopied design, unfortunately now greatly mutilated in its design. A masterpiece of late Gothic architecture is also formed by the main gateway of the building beneath the altar recess mentioned, that is treated most ornamentally with intersecting bands, enclosure by keel arch, figures with canopies and the like. (See art. 232 and Fig. 284).

191. University at Cracow.

In contrast to these universities subdivided into separate groups of buildings, the so-called "Jagelon College" at Cracow, that Casimir the Great founded in the year 1364, gathered

into a connected plan at least a great part of the rooms used by it. The buildings, that we represent on the adjacent Plate in plan, view and section, enclose a rectangular court like a monastery, that is surrounded by an arched portico in the ground story, over this being an open passage. The different rooms have experienced many changes, indeed most when it was arranged as a university library in the fifties of the last century.

277 The main entrance is found at a on the north side, another being at b, with a passage from the middle to a southern court at c. A narrow stairway at d within the cloister leads to the upper story, like the stairway arranged in the castles of the German Order. The principal rooms have the considerable height of 23.0 ft. Thereby becomes possible the arrangement of an intermediate story over the smaller rooms, and two separate stairways at e and f make accessible the groups of rooms separated by the great hall. It is surprising at first, that besides very few large rooms, the smaller ones entirely predominate. Yet when we see mediaeval audiences represented, we always see but few pupils sitting at the feet of their masters, and must assume, that for many lectures such small rooms sufficed. Certainly we cannot assume, that all the numerous apartments in this building were utilized for purposes of instruction; such richly subdivided scientific pursuits cannot be attributed to a mediaeval university of the rank of Cracow. It is rather to be assumed, that most of these rooms, and probably indeed also the entire lower story afforded living rooms for professors and students. Later and in the 17th century they were arranged for auditoriums, the names of famous instructors being still attached to many. As for the location of the great hall, we have only conjectures. The hall G is indicated as an important room by a bay window, so that it appears to have the best claim to this appellation. The peculiarly L-shaped hall, that encloses it on two sides, judging from the windows, was indeed built in this form and does not result from a later rebuilding. Again by comparison with other plans (for example with the lower castle in Rudesheim; see Art. 80), it may perhaps be explained as the dormitory of

the "assisted students".

Peculiar tendencies are presented by the treatment of the roof of the building. In order to protect the upper passage from rain, the main roof has been allowed to project so far beyond the wall of the court, that one-third the roof lies free. After a duration for centuries, the connections loosened, and the ends of the beams bent downwards, so that at the previously mentioned restoration, it unfortunately became necessary to place struts beneath it in order to lessen this impression. Eccentric according to modern conceptions, but entirely corresponding to the rule in the middle ages is it likewise, that each part of the structure has its separate roof, ending in two gables. Over the northern wing lies a roof extending its entire length, whose framework is given in our section. Since its width projects over the open passage around the court, its gable reaches to 1 on the eastern side. Free beside this rises the rectangular roof of the southern wing extending from 1 to o, but it stops before the hall on account of a gable roof running from east to west, adjoined by another similar roof over the hall H. Between these separate roofs lie valleys everywhere, that men did not fear in the middle ages. From the modern objections to this arrangement of valleys, men have known how to avoid them on the College Jagellon by extending the ridges of the roofs to the adjoining roofs; but thereby was very unfavorable changed the artistically animated subdivision of the masses of the whole. In the place of the richly grouped treatment now appears the impression of a combined roof, before which are built gables as mere decorations without internal connection.

192. Hospitals.

Great activity was also developed by the middle ages in the domain of hospital buildings. To contend against and protect from disease, men were not capable on account of a low state of medical science, and vast losses in the energy and means of the people arose from the devastating inroads made in the entire West by plague, smallpox and leprosy. But vast misery also prevailed within the limits of the possible, and besides the zealous activity developed by the later Orders of monks

in the care of the sick, rich foundations were established everywhere in order to provide hospitals and refuges for aged citizens left helpless and asylums for the insane. The latter were commonly termed "courts for good people" with a superstitious fear of the name of the chronic illness, and always lay far outside the cities, in order to lessen the danger of contagion by the isolation of the sick. They regularly form simple and entirely rural groups without any special peculiarity in architecture. On the contrary actual hospitals for patients stood within the city walls, or at least close before the gates. Their extensive origin also led to the development of quite peculiar architectural forms.

193. Hospital at Oues.

As such is first to be mentioned the adaptation of the monastery plan to the purpose of caring for the sick, for which the Hospital at Oues on the Moselle presents a good example. (Fig. 238 187). It comprises two separate groups of rooms. Adjoining the beautiful church, treated as a small central room, are arranged the rooms of the nursing brothers together with an imposing assembly hall. West of this the wards for the sick extend around a great vaulted cloister, two of medium size in two aisles vaulted on columns, and a long hall extending at right angles around two sides of the cloister, in which small cells are enclosed by partition walls. In a simpler plan in the Hospital at Beaune, that Verdier and Gattois reproduce in their frequently mentioned work, the necessary rooms are arranged around three sides of an elongated court.

Note 187. From Schmidt, C. W. Baudenkmale in Trier und seiner Umgebung. Heft 3. Treves. 1836 - 1845.

194. Hospital at Tonnerre.

But a different kind of plan appears to have been preferred, to which with a greater simplicity of the basal idea cannot be denied a certain grandeur. A great hall was erected as the chief room, somewhat in the style of a monastic dormitory, in which the beds for the patients were either open or separated by low partitions. The dimensions of these walls naturally varied greatly according to the means at command, from

The little hall receiving 5 or 6 beds to quite a small
 Perhaps the largest of the plans remained in the original
 at Tonnere in France, erected in 1885, whose general plan was
 given in Fig. 282.

From 1885. From Villeret-les-Bains. Vol. 8. p. 107 et seq.
 B is the great hall for the sick, whose detailed arrangement
 will be considered later. At one end there is an entrance
 11 B and a little chapel E, at the other being a vaulted
 it with space and a side room for holding divine service. The
 is again contains also the tomb of the founder, Villeret
 Genuardi, Queen of Sicily, sister-in-law of Louis the Great,
 and it was separated by a choir screen from the school and
 ward. Thence led an elevated passage, reached by the winding
 stairway 5, to the dwelling B of the Queen. Another passage
 led to the dwellings of the nurses and to the kitchen K. K.
 On the extensive side is then found a laundry at 6 on the right
 very, as well as the house of the prior at the east of the
 out hall, who had charge of the entire institution.

It is covered by a massive wooden tunnel vault and
 containing 40 cells, separated by low wooden partitions. There
 then a wooden gallery extends along the side walls, which
 it is possible to watch the patients without disturbing
 view of a portion of this artistically as well as practically
 very important design.

If this mode of building no longer corresponds to our
 our views on account of the impossibility of isolating
 some patients, it must be designated as entirely unsatisfactory
 in its grand spaciousness and overlight, under modern conditions.
 It also continued until in later times in such
 greatly hospital in Vercelli was arranged according to this
 ground plan.

185. Asylums.

It is the last of the plans of the hospital in Vercelli which we possess a very important example in the hospital

the little hall receiving 5 or 6 beds to quite colossal size.

Perhaps the largest of the plans remaining is the Hospital at Tonnerre in France, erected in 1298, whose general plan we give in Fig. 239.¹⁸⁸

Note 188. From Viollet-le-Duc. Vol. 8. p. 107 et seq.

^{2/0} ~~A~~ H is the great hall for the sick, whose detailed arrangement will be considered later. At one end lies an entrance hall B and a little chapel Z, at the other being a vaulted choir with apse and a side room for holding divine service. This choir contains also the tomb of the foundress, Margaret of Burgundy, Queen of Sicily, sister-in-law of Louis the Saint, and it was separated by a choir screen from the actual sick ward. Thence led an elevated passage, reached by the winding stairway J, to the dwelling F of the Queen. Another passage N led to the dwellings of the nurses and to the kitchens K, M. On the extensive site is then found a laundry at R on the river, as well as the house of the prior at the east of the great hall, who had charge of the entire institution.

The great hall has no less than 61.0 ft. width by 288.7 ft. length. It is covered by a massive wooden tunnel vault and contains 40 cells, separated by low wooden partitions. Above them a wooden gallery extends along the side walls, which makes it possible to watch the patients without disturbing them, as well as to manage the elevated windows. Fig. 240 gives a view of a portion of this artistically as well as practically very important design.

If this mode of building no longer corresponds to our present views on account of the impossibility of isolating contagious patients, it must be designated as entirely unsurpassed in its grand spaciousness and oversight under mediaeval conditions. It also continued until in late times in such appreciation, that even at the beginning of the 19th century a costly hospital in Vercelli was arranged according to this ground plan.

194. Asylums.

Likewise the institutions for the care of aged citizens needing assistance were preferably erected in this form, of which we possess a very important example in the Hospital of t

Heilig Geist at Lübeck.

The building was already erected in the 13 th century, was later substantially enlarged, and behind its abruptly rising facade with three gables, it combines the entrance hall and chapel in a three-aisled interior with cross vaults. Behind this lies a hall entirely similar to that at Tonnerre and divided into small cells; but to better utilize the space these columns are so arranged in aisles, that the middle of the hall is also occupied. In later times they were changed by an upper ceiling into small enclosed chambers, but were doubtless originally open at top in order to participate in the air space of the hall.

The use of such a "benevolent house" naturally required a series of subordinate rooms, and first of all some rooms for the isolation of sick persons and a warmed room for winter. These rooms in Lübeck are grouped around some courts at the side of the main building.

196. Heiligkreuz Hospital at Goslar.

We give in Figs. 241 to 244 ¹⁸⁹ in plan, section and elevation a smaller, but very well developed design, the so-called "Great" Heiligkreuz Hospital at Goslar. It must have been erected in the year 1253, and the Romanesque portion of the side next the street must belong to that time; the interior was indeed restored at a later time, about in the 17 th century, but is still entirely based on the mediaeval customs of living.

Note 189. From Wolf, K. Die Kunstdenkmäler der Provinz H Hannover. II. Reg. Bez. Hildesheim. 1, 2; Goslar. p. 196 et seq. Hanover. 1901.

211 One enters from the street a great paved hall, the principal room of the building intended for general use. Adjoining it on the left of the entrance is the chapel, only separated by a perforated screen, so that the altar is freely visible from the hall. Along the opposite longer side lie in a long series the sleeping cells of the inmates, 10 in number and averaging 7.4 x 13.1 ft. in dimensions. They occupy but one half the height of the hall; hence another series of such cells is arranged above the lower one, and is made accessible by a narrow gallery with a stairway lying at the rear. No p

provision exists for warming the cells or even the hall; thus for comfort in winter was required a warmed room as a common assembly room. It is now found, restored in the most tasteless modern way, in the space enclosed by single lines at the rear end of the hall. But it also existed at the same place, perhaps in smaller dimensions. If for the winter period was thereby required for the inmates the comfort then usual, for enjoyment of the fine season of the year the garden was available, that is found behind the building, and is made separately accessible by a gateway.

It may perhaps become wearisome, if we always emphasize the same point of view; but it is still not superfluous to show, that even for these buildings devoted to the care of the sick and needy, the ancient German idea of the hall retained its predominating influence until the close of the middle ages. Since we can also observe the same condition in the other domains of our representation, then arises the opinion, that in spite of the confusing variety of the separate cases, the middle ages still enjoyed in its architectural ideas a great restraint and unity. While in this respect the relative adoption of novel ideas appears more today, the ancient masters took more pains to treat the details of forms and the workmanship in the most careful manner.

2/3 II. Development of the Exterior.

197. Similarity of the Bases.

Existing buildings have represented to us the course of mediaeval domestic architecture, so far as it was determined by the purpose of the buildings, and therein has appeared necessarily a grouping in different divisions, according to how the varied requirements of the separate classes made apparent their distinct influences. In this general arrangement of the buildings and in their grouping, there reigns for the mediaeval masters no basal theory or school traditions, but each separate building was treated as an independent creation with the freest regard to the special conditions, as the practical needs and the surroundings determined.

That entire rows of buildings bear a strong similarity of appearance to each other, this was merely that the entire number of individual structures originated under entirely similar conditions and served for absolutely the same purposes.

Then indeed from such uniformity of problems and similarity of appearance arose a certain tradition, which caused men to adhere to certain forms simply as self-evident, without thinking whether they might be also somewhat different. We have also previously referred to this directly and indirectly. From the power of tradition is indeed derived the maxim, that under what conditions conclusions should and must be deduced from later structures, as to such earlier works that no longer exist, or in regard to the original form of such as come down to us in mutilated shapes. Likewise depends upon the community of traditions the conformity in the works of each local architectural group, and on their diversity the differences of the separate schools and their circle of forms. Particularly the local schools have become the transmitters of every appearance, that certain parts of the buildings have become so fixed after long natural use, that in the eyes of the architect, as well as in those of the owner and of the entire people, as to become entirely self-evident, and in consequence of the force of custom, were everywhere employed, after their special real significance had long disappeared.

198. Determination of the Proportions of the Masses on a Mathematical Basis.

However, somewhat differently from the conditions, which always produced a great diversity in certain separate groups, did it occur in those relating to the detailed treatment of the forms. For the latter, with entire freedom in the different cases, there results a still more unified structure, changing more in time than in country, and it comes next to seek therefor reasons of a general nature. As one such cause has frequently been taken the existence of definite rules for determining the proportions of rooms, in which is taken as a basis, that certain trade directions of the latest middle ages prescribe definite dimensions as models, and that it is possible to insert in the drawings of old buildings a number of parallel lines or equilateral triangles. We cannot allow any importance to this very theoretical assumption. Therefore, that the previously mentioned trade rules of beauty afforded no support for the mode of working in artistically creative lines, is no doubt possible. They form merely a torpid remnant of independent artistic life, a guide for those unable to find suitable proportions of the masses by their own feeling. They certainly were not much employed and assuredly not in general. And the attempts to prove that certain proportions of triangles determined the proportions of the sections and elevations of mediaeval structures, suffer greatly in their means of proof, because in the lines inserted in the drawings, the height dimensions were sometimes fixed, including and sometimes excluding the plinth and impost caps. Sometimes the heights to the crown of the arch or only to the springing lines, sometimes between the axes of the piers, or including the widths of the piers, or merely the clear span of the openings.¹⁹⁰ It is to be remembered here, that the usually careless construction of mediaeval buildings, and still more the inaccuracy of most measured drawings afford no proof whatever, that these are arranged in reality as they are on paper. But from the artistic standpoint there is in the high estimation of such systems of lines a recognition of what they may indicate in general for the effect of a building.

Note 190. For example, compare in Viollet-le-Duc (vol. 8, pages 540, 552) the production of the proportions of the masses of S. Sernin in Toulouse, in which the freedom mentioned

is striking, that such different proportions, imperceptible to the eye, and likewise never noticed as contemporary, such as those between the total width of the five-aisled interior to the height of the center ridge of the roof ($\frac{1}{2}$), and that the proportions in heights of the two main cornices of the two side aisles should have been designed after the proportions of an equilateral triangle.

The production of good proportions in space and area is not as simple as the author of this opinion believes. Besides the mere masses, a multitude of other particulars play the greatest part. Perspective foreshortening and the influence of adjacent portions of the building, the arrangement of the lighting, the separation of certain parts by color or members, the refinement or rudeness of the details, the continuous course of the lines or alteration of their directions etc.; almost infinite is the number of such influences, which must be considered by the architect in his creations, and which he can employ at will, in order to essentially change the effect of the mere proportions of masses, indeed even to annul and change them to the opposite. Certainly the trained human eye, like the ear, has enjoyment in simple and systematically repeated proportions of the masses, even involuntarily so, just as one musically gifted strikes the corresponding intervals correctly, and the creating architect will make such proportions of the masses appear in his works. 191

Note 191. The author was himself surprised some years since by the number of continuous lines, that could be drawn on an earlier design, made without any such intention.

But just as little as a melody is produced by the intentional computation of the number of vibrations, so little do we believe, that the introduction of the proportions of triangles has ever exerted a substantial influence in the field of architecture. Likewise in this case is the artistic creative power at all times infinitely richer, than the theories derived from its works, and therefore continually limping after them.

199. Importance of Training of Artisans.

On the contrary, the greater importance is due to the influence exerted on the form treatment of the middle ages by the

method and skill in the handicrafts as a general and uniform tradition, less affected by regional peculiarities. Not in the sense, that one should therefore designate mediaeval art in a decided sense as a tradesman's work, i.e., aimless and thoughtless practice, as often popular in a superficial misunderstanding. In the middle ages the artist did remain dependent on the mysteries of the trades; but while he possessed complete mastery over all methods of the tradesman's work and a mature knowledge of the peculiarities of materials, there was for him his regard for the self-evident basis of the development of his own bold and often startling art ideas. That the material was treated, not in accordance with preconceived and abstract school rules imported from abroad, but that just from its perceptible peculiarities and the mode of its use, were derived the incitement to the continual advance in the treatment of forms, in this we see the soundest basis for the artistic creation of the middle ages. If we consider therewith, that this "artisan's" bases were firmly held also by the art of the Renaissance as an inheritance from the middle ages, about which the scrollwork of historical and esthetic theories and abstractions but loosely played, so that its value may scarcely be too highly esteemed. Therefore we also make the artisan's division of the different structural works the basis of the following description of the development in the details.

Chapter 4. Treatment of the Wall.

a. Wooden Construction.

200. Different Methods of Construction; Log Buildings, Half Timber Work.

The architecture of the Germanic peoples, which as already stated, supplied the impelling forces for the domestic architecture of the middle ages, at the beginning was almost entirely based on the use of wood for all supporting parts. Existing in nearly inexhaustible quantities, easily wrought and decorated with simple tools, it so conveniently offered itself for the erection of comfortably warm and even important structures, that in the construction of dwellings, particularly of citizens and of peasants, its predominant role extended far beyond the limits of the middle ages. It may then remain undecided in what form wood construction first occurred; whether as log construction with walls laid up with trunks more or less wrought, or as half timber work, between whose artificially joined timbers the panels of the structure were added in a different structural material -- earth, brush, or later masonry of split stone or bricks. The predominance of log construction in the Scandinavian North with its very ancient conditions and also in the East of Europe, less affected by later development, as well as many descriptions of old halls of chiefs, may speak for a very high antiquity of this mode of construction. On the other hand, the excavations teach us, for example the settlement at Grossgartach treated in Art. 4, that already about 2000 years before the period treated here, men understood how to build walls of brush and earth, woven between stronger posts. Thus one might assume, that both modes of construction were perhaps separated in different countries, and were invented at the same time and were further developed, wherein the greater or lesser abundance of wood and the different climatic conditions of the various regions may have determined the choice of either method of construction.

201. Decadence of Log Construction.

Meanwhile in the further course of development log construction everywhere receded before half timber construction, which may well have been connected with the gradual disappearance of the great forests. Thus log construction generally vanished

entirely from the domains of mediaeval art works. Also from the perishable nature of the material has disappeared everything erected in log construction, and we see from the often richly carved works of Scandinavian art, but which mostly belong to the domain of the church, that the half timber work alone prevails in the construction of the houses known to us in the artistic wooden construction of the middle ages. For the very important and beautiful wooden architecture of the Alpine lands must here be left untouched. It must remain undecided, whether its treasure of forms, as many prefer, is based on primitive traditions, regarded by many as aboriginal Teutonic, and by others are connected with the somewhat enigmatical aboriginal people of the Rhaetians. It is here determinative for us, that the existing buildings do not go back before the 16 th century, and assumed conclusions on the kind of their mediaeval predecessors are not made possible.

202. Earliest Half Timber Construction.

But even the half timber structures of the earlier times have no existing remains, which belong to the epochs of the masonry construction of the Romanesque and early Gothic periods. If we desire to attempt to represent again mentally to ourselves the wooden architecture of those epochs, these must be in proportion to what is sparingly preserved to us from the 14 th century, more abundantly from the beginning of the 15 th century, we must regard as filled with plain severity, still strongly contending with structural difficulties and without the rich ornamentation by carving, that men love to employ according to northern examples, in modern creations as characteristics of the "Romanesque" style. A peculiar form expression in wooden architecture cannot have developed itself then; we may conclude from this, that just the earlier remaining buildings are devoted to the plainest forms with the avoidance of all carved ornamentation and with a remarkable adherence to the details of stone architecture. For this compare the pointed arched windows and doorways in the ground and second stories of the house represented in Fig. 139 and the mouldings there used. On this in particular are found no remains of Romanesque traditional forms, which however have abundantly remained in other branches of the art industries

of the 14th century. Without basis indeed is also the widely extended assumption, that to the oldest buildings is peculiar the use of particularly large timbers; for even in this respect a sequence of epochs is not at all to be determined on the buildings remaining to us. The very old house just mentioned does not even exceed in the main supporting posts the dimensions later generally common; the timbers composing the walls of the upper story are characterized by even unusual smallness. And in contrast to it are abundant late works, such as the House of the Butchers' Guild at Hildesheim, on which especially large timbers were employed, in order to impart a new charm in the sense of the late period to the forms already less used. In the decision of this question, it is to be considered, that in the earlier times perhaps larger timbers were at command, but that with them also the difficulty of working, as well as that of transportation to the site were materially greater, but the means at hand were mostly less.

Note 192. After Schafer, C. Holzarchitektur Deutschlands. Berlin. 1889 --.

203. Corbelling of the Stories.

In the general design of the wall, a very prominent characteristic almost regularly forms a sharp difference between half timber and stone construction; this is the corbelling of the upper stories beyond the lower ones. Not as if each layer of floor beams was absolutely utilized for such a "projection"

218 The examples given on pages 141 and 149 have already proved to us, that the addition of an upper story was probably formerly effected by framing in an intermediate beam, rather than by placing a separately built "story". This method of construction maintained itself frequently in peasant architecture until modern times, and also in citizens' houses until deep in the Renaissance period, as examples of which may serve the houses from Osterwick in Schäfer's work on "Die Holzarchitektur Deutschlands", ¹⁹³ as well as the corner House with bay window in Bäckerstrasse at Goslar from 1612. It is likewise found in upper Germany as well as in the Rhine lands, therefore we have no reason to regard it as a mark of influence from lower Germany, but view it everywhere rather as the ancient remnant of an earlier mode of construction, as well as the

mode of building represented on an example in Art. 138 (Fig. 152), where the floor beams are intersected by these long posts. By the continuous surfaces of the two lower stories, it affords the artistic advantage of a more animated contrast between the animated forms of the upper corbelled story, and this indeed afforded opportunity for the imposing form of peasant's house, such a favorite in lower saxony and particularly in Brunswick, where over two vertical stone lower stories, a richly treated upper story represents the massive crowning of the wall. Yet in time the developed domestic architecture treats the houses, in which each story has its separate cornice intersecting the vertical posts, as a rule and for the greater number.

Note 193. Berlin. 1889 --.

Note 194. From Bickell, L. Hessische Holzbauten. Marburg. 1887.

Note 195. From Pfeifer, H. Holzarchitektur der Stadt Braunschweig. Berlin. 1892.

Note 196. From Hanftmann, B. Hessische Holzbauten. Marburg. 1907.

204. Cause of Corbelling.

Concerning the reason for this projection of the upper story, various differing conjectures have been made. Men have desired to derive their persistence from the corbelled galleries of defensive towers furnished with holes in their floors, as if the citizen in a peaceful quarter of the city always had to consider the defense of his house. Clearer is already the reason, that the projecting external wall was to oppose the internal loading of the beams. Such a projection would be technically correct, and might indeed be attributed to the experienced masters of the middle ages; put it still appears against this explanation, that the corbelling appears almost entirely on the walls visible from the street and scarcely ever next the court, where it would have served the same statical purpose.

Another practical advantage of the corbelled framework is obtaining space for the upper story, and this purpose was certainly influential in the origin of such widely projecting upper stories, as on the house in Marburg, as well as for the

frequent repetitions of the projection, as it so limited the clear width of the alleys, especially in South German cities, that it had to be restricted to a definite amount by the rules of building officials. But to regard it as a generally valid reason for the creation of the form in question is again favored by the fact, that the rear of the buildings so seldom exhibit the projection, and also that it was rarely employed for the more valuable lower stories, but always for the less useful for the upper warehouse stories.

Therefore we must regard the most important reason as its beauty, to which this preferable form owes its general use. It forms the most effective decoration and subdivision of the half timber work, derived from the mode of construction of wooden architecture.

205. Development of the Story Cornices.

Fig. 245 exhibits a section through such a cornice of the simpler kind. We see in that the plate of the lower story A, in B the ceiling beam projecting beyond the external wall, simply rounded at the end and having a narrow chamfer. It is supported by a curved and hollowed strut, and it supports flush with its outer end the slightly moulded sill C of the upper story. (All projection of the end beyond the face of the upper story, and not protected from the weather, forms a structural defect as a dangerous place for the effect of wet. Such unbeautiful forms have only been adopted in the 19th century from a misunderstanding of the mediaeval treatment). Between plate and sill is formed an interspace, which in our example is closed by an obliquely placed board, inserted in corresponding grooves in the beams. Instead of this is also found in a simpler treatment a solution, in that the earth filling of the ceiling, that occupies the entire height of the beam, ends vertically at about the rear face of the sill C, thus being connected to the latter. For projections of about 1.3 ft. or more, such a horizontal extension of the internal earth covering could not occur; it was then frequently covered by boards, though not always so.

Meanwhile such wide projections are exceptional. The distance between plate and sill is chiefly limited to the dimensions of the usual sections of the timbers, and it was filled

by pieces of wood inserted in a vertical groove in the beam. These wooden pieces were regularly profiled, in plainer structures so that the profile, perhaps a simple cavetto, stops sidewise against the surfaces of the beams. But generally the profile changed into the rectangle before each beam by a rectangular recession, by a curved or beveled ending. (Fig. 246 (192)). Such an entablature then indeed projected 1.5 to 2.3 ft. and produced by the bold recessions extremely animated and rich effects, that by the selection of very imposing dimensions of timbers, particularly in lower Saxony, frequently attained great monumental importance. To such enhancement substantially contributed the use of head bands of corbels under the ends of the beams. These were also sometimes more or less richly ornamented, rising in straight lines, cut out in segmental or richer profiles, and decorated by surface ornament or by rich figure carvings. But in the middle ages they were strongly directed outward with an inclination of 60° or more from a horizontal. In order to arrange them, it is naturally required that the ends of the beams should be just above the wall posts.

Note 198. From Uhde, C. Braunschweigs Baudenkmäler. 2nd edition. Brunswick. 1893.

The ends of the beams are cut off smoothly in simple structures, and are only effective by their bold projection, thus forming the first points at which any ornamentation is added. They were rounded off at the lower angle, this being with the chamfering of the angle or the return of the rounding at the sides. Richer effects were obtained by combined mouldings, but consideration was paid to the undiminished strength of the end of the beam. Therefore supporting corbels were inserted in deeply sunk cavettos, and these were utilized as decorations by carvings, a very decorative play of forms being developed there. (Fig. 247 and the other representations of half timber structures).

Note 199. From Schütz, W. Der mittelalterliche Profanbau in Lothringen. Düsseldorf - Pl. 54. R.D.

206. Angle Forms.

These forms of cornices arose in the most natural manner on the longer walls of detached houses, where rest the ends of

the transverse beams. With its strictly limited use is developed the form treatment of half timber construction in the clearest and most surprising manner from the structural purpose and the nature of the building materials. But the beauty of form already had led to its use in a less consistently manner. This was also employed in narrow gabled houses in blocks, in which the beams were naturally parallel to the street, and for detached or corner houses, this was preferably continued around the corner. The means for this was the arrangement of short jack beams, which rested on the plate and were tenoned into the nearest entire beam, as may be seen for the roof beams in our representation of the house at Münster in Fig. 152.

This produces an entirely plain solution in the plane front surface; but at the angle the difference between the last beam ends and the angle jack beam is great on account of its width. (Fig. 248¹⁹⁵). Therefore two false jack beams are tenoned into the angle jack beam and are supported by corbels. (See the arrangement sketched in Fig. 249¹⁹⁶). When these beam ends with their corbels meet thus at the angle beam, a corner solution is produced, which in spite of its incorrect construction still makes a very strong and satisfactory impression on the eye. It should be mentioned, that the necessary use here of quite short jack beams, supported only by end tenons and brackets (without bearing on a plate), was later transformed to the corbelling of entire fronts, whereby the sound 228 basal principles of form were indeed strongly infringed.

Note 200. From Pfeiffer, H. Holzarchitektur der Stadt Braunschweig. Pl. 6. Berlin. 1892.

207. Plate and Sill.

As the upper termination of the wall, the plate remains without ornamentation as a rule; it seldom receives a moulding of slight projection. As usual in the Saxon provinces, in case the beams rest directly above the lower posts, its architectural importance is then limited to bordering at top the panels of the framework, and to holding together the posts as a termination. Therefore it is occasionally replaced there by a flat plank, through which the tenons of the posts extend into the beams. An essentially more important part is played by the sill of the upper wall. To it are first attached the

ornamental accessories next the beam ends, and in favor thereof, it generally requires very important dimensions, especially in height. We have already mentioned its pretty rich mouldings. Their effect is increased by their projection from the face of the sill in offsets or in segmental arches, and thereby surfaces are enclosed, which are preferably utilized for ornamental and figure carvings. In other cases the bottom of the sill is beveled and cut in the surface is a slightly sunken band of scholl work, inscriptions or blind tracery. (Fig. 251).

Note 201. From Lehmgräber, O. *Mittelalterliche Rathausbauten in Deutschland*. Pl. 14, Figs. 1, 2, 3. Berlin. 1905.

Note 202. From Schmitz, W. *Der mittelalterliche Profanbau in Lothringen*. Pl. 60. Düsseldorf. N. D.

224 208. Window Sill Belt.

Further for the expression of very necessary subdivision, the half timber construction receives at the height of the window sill in the better buildings a belt, and this timber is accented above the remainder of the woodwork by a projecting moulding. It is then halved into the posts and struts, while as a rule, the girts flush with the surface are tenoned into them. In the late period, this projecting intermediate belt was properly replaced by members, let flush into the framed members, and accented by projections on the vertical posts. (250¹⁹⁷).

209. Struts.

Essential in the appearance of the whole are likewise the struts, that have to ensure the framework against distortion. In North Germany, where it was especially liked in the cities, in order to open the entire width of the house in windows, the struts are mostly restricted to the spaces below the windows. In the simplest case, they take the form of steeply inclined basal struts; from this was then readily derived struts forming triangles, which entirely filled the angle between sill and post. The wooden surfaces there obtained afforded a favorable and frequently utilized opportunity for ornamentation by carving. One of the richest examples from the Reichsstrasse in Brunswick is reproduced in Fig. 251¹⁹⁸. These form the transition to finally covering the entire rectangular-

rectangular surface with planks and with carvings, a rich arrangement, which was greatly favored in the Renaissance period. Besides this occurred in these regions a very common endeavor to have a continuous series of X-braces. At the corners of the houses then indeed are also added longer wind braces, that extend for the entire height of the wall. In South Germany as a rule, the windows were more freely distributed in the enclosed surface, the posts were placed farther apart and less regularly, thereby obtaining space for a more extensive stiffening of the wall by longer braces at top and bottom, that men liked to set in pairs beside each other, and attached to the timbers to be stiffened by means of a dovetail lap (Fig. 252 ¹⁹⁷). In the predominating use of this lapping instead of the simple tenon fastened by a wooden pin, many see a difference between "Swabian" and "Franconian" half timber construction. In reality in Franconia as in Swabia are so many exceptions to the rule here stated, for example, see the Old Palace at Bamberg in Fig. 119, that its validity is thereby very much restricted.

Note 204. From Viollet-le-Duc. Vol. 6. page 266.

Men liked to use crooked and curved struts for all this bracing; on the contrary, it is seldom found before the entrance of the Renaissance movement, that the outlines of the braces were animated by cutting out in the form of trefoils, quatrefoils and the like. First in this time of the rich later style, that is still entirely based on mediaeval ideas of form, were preferably employed pieces of trunks, cut into curved forms and ornamented by cusps, and the forms were likewise enriched by a series of the frequently interpenetrating crossed braces.

210. Windows in Half Timber Construction.

The window openings were left plain as a rule, only being accented by the recession of the glass surface from the outer face of the wall. For the window leaves were originally almost everywhere attached to the inside of the wall and swung inward; it was a later change, when for a better closing, they were transferred to the outer plane of the wall and opened outward. The opening was seldom enclosed by an angle moulding,

which was then extended along the sill with square corners, but on the contrary it was rounded at the upper angles. Only in the late epoch was the upper window lintel cut into the form of the ogee or curtain arch, when the moulding enclosed the opening; more rarely was the upper termination cut blind in the very high window lintel. (Fig. 253 ¹⁹⁹).

211. Doorways in Half Timber Construction.

On the contrary the doorways in all times received the richer form of the arched top and a decoration by carved angle mouldings. The apex of the arch was then regularly cut into the lintel, either blind, as on the Münden House in Fig. 152, or cut out in low form. The sides of the arch were cut into solid corbels or head pieces. Fig. 204 ²⁰⁰ plainly shows the jointing and forms of the work on a late Gothic example.

Note 204. From Old English country Cottages. Extra number of the Studio. page 73. London. 1906-1907.

212. Half Timber Gables.

Above the walls treated in this manner, the gable generally rises in a flat plane without further corbelling. The ends of the internal purlins are visible on it and determine the places of the main or connecting girts. They mostly project from the surface of the gable roof only by the thickness of the rafters; but occasionally they are carried out farther, in order to support a strongly projecting gable. (Fig. 143).

226 But also sometimes even in the gable the different stories were accented by corbelling the plates; then in each story a series of vertical posts must be tenoned into the last plate.

213. Roof Cornice.

Along the longer sides of the house, the arrangement of the roof beams frequently extended in a manner entirely similar to that of the lower cornice. (Fig. 255 ²⁰¹). Since in the shadow of the eaves of the roof, this richness of form would however be less effective, men were usually satisfied by cutting off the beam ends obliquely, covering them with a painted or plainly moulded board, from whose upper edge the eaves of the roof projected only a few inches.

214. French Half Timber Work.

German half timber construction developed even till the decadent epoch of the late Renaissance its rich form life within

the limits and in the closest connection with proper construction, and it thereby obtained the advantage of a national, clear and strong, sound appearance. A different development is shown by the wooden architecture of France and of England. The former is derived from arrangements entirely similar to those of German art and perhaps exceeds this in age. Certainly the dates of the different works are not fixed; particularly must one regard the representations of houses of the 12th century given by Viollet-le-Duc in his magnificent work, the *Dictionnaire de l'Architecture Francaise* etc., rather as products of conjectural restoration than as historical evidence. But in the proper framing in France were quite early mixed mere forms without structural meaning, as for example in Fig. 256²⁰², of small shields of arms carved from the solid wood of the posts, the corbel supports of the window belt, as well as the projecting sill. In the later time was developed here a tendency to graceful elegance of appearance, that shows itself in the accenting of the vertical timbers, in the suppression of the strong projections of the entablature, and in the addition of graceful carvings imitated from late Gothic stone forms. (Fig. 257²⁰³).

215. English Half Timber Work.

In England half timber work apparently at first pursues a rather tasteless course in purely structural construction. On the contrary in the late period, at the entrance of the Renaissance movement, there broke out in opposition thereto the desire for fancifully varied ornamentation of the surfaces, and men could not employ themselves sufficiently in the use of oblique continuous lines as well as of curves, and by the sawing of the forms from timbers. We give an example belonging to the more moderate tendency, a country house in Shropshire in Fig. 258²⁰⁴.

b. Masonry Construction.

216. Advance of Stone Construction.

Stone construction, as the later acquisition in comparison with wood construction, came into use in the different countries at quite different times. From the Romanesque South and Romanized Gaul, it extended very gradually toward the North and East, at first naturally for church buildings and monast-

monasteries, by means of their traveling relations with the South. Only later did it occur in actual dwellings, and this may be explained by attributing its use to the emperors and the bishops. Characteristic of its part is the statement, that a stone house, which bishop Alebrand erected in the year 1036 at Hamburg, so aroused the envy of duke Bernhard of Holstein, that he decided to build a stone house likewise. Stone construction of dwellings long remained a privilege of the greatest men and also of public buildings; first in the 14th century the strengthening of the citizen class and the care for safety from fire in the cities required its general use for citizens' dwellings; but even then still more in the great settlement cities of the East; Lübeck, Stralsund, Thorn etc., than in the cities with already older traditions in middle and Southern Germany.

217. Split Stone Construction; Stucco Coating.

As a building material in the simple conditions of the early time, split stone played a greater part than ashlar masonry, requiring greater manual skill, and therefore it was also occasionally left with its effective rough surface. This is to be assumed in the indeed rare cases, where by reason of herring-bone courses or even by rosette combinations of blocks of different colors in the coarse building material a certain ornamentation was produced. But if in any manner architectural members in cut stone were inserted in the split stonework, and indeed generally in the later time, men were accustomed to ensure the effect of these finer members by covering the rough split stone masonry with stucco. As a rule, this then extended over the irregular jointings of the dressed stones so far, that it followed the outlines of the principal forms at uniform distances. On buildings, which have yielded to later transformations, it may be plainly recognized, that the surfaces to be covered by stucco were prepared by being roughened. Both the mere open jointing as well as the roughcast, by which one now endeavors to produce an antique impression, do not correspond to mediaeval building customs. Only one occurs; that with irregularly rounded materials, -- granite, basalt pillars etc., -- the entire stone was not covered by stucco, but in certain parts this was permitted to project

from the stucco, but then regular masonry joints were incised in the stucco, which with the white color became strongly apparent, and thus gave the split stone masonry a regular appearance, almost recalling ashlar work. The stucco was as thin as possible in all cases, indeed being applied during the construction of the masonry and smoothly shaped with the trowel; in many places this troweled stucco was smoothed almost to a polish by coating with pure lime paste at the same time. Such carefully treated surfaces thereby acquired an expression, that they did not represent perfect planes, like the modern stucco applied with the brush and straightedge, but it possessed a certain animated movement from the use of the trowel.

218. Ashlar Masonry.

By this method -- cut stone for the angles and all architectural members -- with split stone masonry elsewhere, most South and West German houses were erected. Pure ashlar structures are more rarely found in Germany, but on the contrary are abundant in the buildings of the rich French nobles. Ashlars with bosses appear in Germany frequently in the epoch of the Hohenstaufens, at the close of the 12th and in the first half of the 13th century, then also for example, in Nuremberg again in the 14th and 15th centuries; but with rare exceptions, they serve more for the impressive treatment of defensive structures, than for actual dwellings.

219. Brick Construction.

In place of the lacking natural stone in the North German lowlands and in Eastern middle Germany, burned clay was frequently employed as the building material. Its artistic effect substantially depends on the freedom, both on the frequently varying and scarcely ever uniform coloring, as well as the treatment of the bonding of the surfaces. The depth of the effect of color was freely animated by the arrangement of small surfaces of stucco, or by the use of glazed bricks. This use of glazing was at first limited to certain architectural members, especially decorative arches and friezes; but it then extended to the surfaces and covered these with uniformly and closely placed bands or large lozenge patterns (Fig. 259²⁰⁵), to which was then added also the enclosing of the angles by glazed bricks. The unity of the surface was thus preserved

in every case, and hard endings were avoided. In certain cases, thus on the extension of the City Hall in Lübeck and elsewhere, the entire facade was composed of glazed bricks. A less favorable effect was produced, if merely the openings were enclosed by glazed bricks, which more rarely occurred. Almost never were combined glazed bricks used for subdividing the surface or as a cheap substitute for moulded members, and 229 this for good reasons. The color of the old glazing is mostly brown or blackish green. It was evidently made from crude materials, impure in a chemical sense; therefore it shows with much advantage to the artistic effect, not the uniform coloring of a lacker coating, but a play on the different bricks in often quite different tones.

Note 205. From Steinbrecht, C. Preussen zur Zeit der Landmeister. Fig. 87. Berlin. 1888.

c. Painting of the Exterior.

220. Painting of Brick Buildings.

More commonly than is generally assumed, painting in colors also covered the exteriors of houses. Brick buildings were frequently coated with a dark and strong red from top to bottom, generally without any attention to the joints, and from the quiet background of this covering or the brick surface with dark joints, the members of the cornice and the openings were relieved in animated colors -- white, black, Schweinfurt green and yellow ochre. On the Southern gable of the City Hall at Frankfort-a-O, which must date from the beginning of the 14th century, a simpler mode of accenting the architectural members has been preserved; the tracery of the great rose window and of the horizontal frieze has been painted black, and that of the panels of the piers a snowy white by coating with thick limewash, the latter being further accented by covering the stucco ground behind it with a dark gray color. (Fig. 260 ²⁰⁶). To this painting of the parts in brickwork is then further added everywhere the very extended painting of the stuccoed panels with all sorts of ornaments, particularly with tracery in bold red and black colors, and with strongly colored shields of arms.

Note 206. From the Author's Drawing.

221. Painting of Stuccoed and Cut Stone Buildings.

221. Painting of Stucco and Cut Stone Buildings.

Likewise in stucco and cut stone construction the middle ages did not recognize the duty now understood, to freely show the building materials employed, but everywhere unconcernedly resorted to color, where it seemed artistically desirable. Stucco generally received the clear ground tint; then men liked to paint the angle ashlar and the accompanying lines of the projecting architecture, with entire friezes on the light surfaces. Similarly as in brick construction were also certain parts here contrasted with the surfaces, window enclosures etc., as animated and more richly colored. With greater richness of means, figures were also not rare on the exteriors of buildings in the middle ages. The giant Goliath house at Regensburg likewise already had its mediaeval prototypes, as well as also the representations of saints so frequently remaining from a later time. The wealth of forms in the middle ages continues in such colored ornaments in great abundance; here are shown illustrations from the fables of animals or separate animal forms, there are other figures engaged in various affairs, and everything conceivable and inconceivable is utilized for the decoration of the walls of the house. For the application of this ornamentation was already developed in the Gothic period the process of sgraffito. Rich late Gothic friezes executed in this mode were found on the Canons' Building at Freiberg in Saxony, and rich Gothic architectural motives on a house at Eggenburg in lower Austria. The method came to a freer development and wider use, particularly in Bohemia and Silesia, indeed first in the time of the early Renaissance.

280 But the lively enjoyment of the colored effect frequently led to the covering of entire buildings with painting. Whether we may transfer directly to the reality the coloring in vermilion red and deep blue, may perhaps at first appear doubtful. But the occurrence of such colorings on walls is certain in interiors. And if especially in late French Gothic plain ashlar surfaces are sprinkled with small fleurs-de-lis in relief, and if we find the porcupines of Louis XII and similar motives scattered in relief like fabrics over the surfaces, the thought appears, that these shields of arms and also

the surfaces ornamented by them were painted in similar colors, and that as men manufactured fabrics with heraldic patterns for garments, the house facades were also painted in heraldic forms and colors, whereby the splendid blue or red became predominant in the appearance. proofs of this mode of treatment are indeed not perceived. But we more commonly find entire stucco or ashlar surfaces coated by uniform light red or gray as well as yellowish colors, and then mostly covered by a regular network of white, black or red ashlar joints, painted without regard to the actual jointing. Likewise conventional representations of ornamental ashlar work frequently occur. Cornices, window and doorway enclosures etc. were then often accented as decorative parts by animated painting, thoroughly as previously stated of brick structures, but in richer coloring, when vermilion red, ultramarine and light blue, as well as gold were added to the colors there mentioned. It is there a ground principle, that the coloring of the members in relief is strengthened, in that in general the projecting parts are lighter, the grounds, cavettos etc. being painted darker. Fig. 261²⁰⁷ gives an illustration of the manner in which other painted ornaments decorate the surfaces by an example from Strasburg.

Note 207. From Denkmalspflege. 1900. p. 50. For another example, see the same for 1901, p. 32.

The background is here filled by alternating dark red and yellow squares, which are separated by white bands with black edges. On the crossings of these bands are square white rosettes with green nucleuses. The window openings are enclosed by wide light red bands, which are again bordered externally by a white black-edged band. Following the inclination of the roof, a frieze extended along; on a black ground are yellow scrolls with white leaves shaded with red. The triangles of the gable steps bear on a red ground animal figures in white and yellow colors outlined with black. In the middle of the surface treated in this manner was painted a great figure of the Christ-bearer. (A).

Note A. The terms employed in the text, "vermilion, dark blue, ultramarine", merely denote the animated kind of coloring, but do not state that these colors, as they were, were

applied unmixed. To this widely accepted view certainly corresponds only a very superficial knowledge of the ancient monuments, they have already been much injured by restorations and by new additions. Thorough examination of untouched ancient examples teaches, that the old masters showed a very refined feeling in these things also, and that the splendor of the natural colors was not broken, but that they -- and especially the difficult ultramarine -- were carefully harmonized together by slight additions.

The highest richness of appearance was again produced by the use of representations of figures, that men loved to employ in combination with architectural panelings. The painting of the City Hall of Ulm, in part recently restored, is the richest example on German soil. It indeed first originated in the epoch of the transition to the Renaissance, and in the figure portions is based on models by Burgckmayr, but retains in the ornamental work the conceptions of the late Gothic. Therefore we can with full right still ascribe it to the middle ages, since generally their influence in regard to the painting of houses did not cease at the introduction of "antique" forms, but rather later in the distribution of the ornament and in the mode of flat conventionalization was still very influential. Likewise heraldic paintings, which are usually found separately or are arranged as bands, occasionally extend over large surfaces. An interesting example is the so-called Wappenturm in Innsbruck, which no longer remains in its original form, but which may be seen in authentic representations in the Ferdinandum there. The entire tower was covered by painted armorial shields, which were regularly distributed over all surfaces.

232. 222. Painting of Half Timber Buildings.

Some remarks are to be added yet on the painting of half timber work. ²⁰⁸ Likewise for this the application of colors, which should at the same time serve for the protection of the wood, formed the rule, even though frequently the actual color of the wood may have been left visible. But the woodwork and the panels were always different in color, the latter being characterized by a covering of lime stucco and light tints. In countries where men were accustomed to employ small timbers,

particularly on the Rhine, they liked to draw a thin red or black line around the panel at $\frac{3}{4}$ to 1 inch distance from the frame; otherwise the surfaces remained without painting, or at most received a few slight decorations by lines crossing in lozenge form or small scattered ornaments, which were scratched in the damp stucco by a tool with several points. The decoration extending in the Hesse lands with flower scrolls incised in the stucco and painted, must belong to a much later time, but as a practical and pleasing mode of decoration has a good claim to the revival of it in part in modern times. Thus animated and prominent on these light panels, the structural framework generally receives a coating of strong color, mostly red, in which burnt ochre, caput mortuum, or oxblood were employed as coloring materials. Also tar coating was found, and in Rhenish half timber work the somewhat softer effect of yellow was also preferred for this purpose. On the basis of this strong tone the members were then accented by color in the manner before mentioned; but especially ornamental and figure carving was enhanced in effect by graceful painting in bright colors.

As the binding material of colors, lime was always employed in old times for a stone surface, the porous quality of the ground is effective for cut stone, and on stucco surfaces the chemical combination of the lime ground with earth colors sufficiently fastens the colors. Woodwork may also be frequently painted with lime colors, as today for agricultural structures, for which indeed an occasional renewal was necessary. Firmer adhesion was obtained with oxblood (especially for red and black tints), milk or curd colors, and the latter formed the rule for fine works in carving and chiseling.

d. Subdivision by Cornices etc.

223. Plinth.

The wall constructed in such a manner then received a further subdivision by cornices and members of different kinds. The corresponding forms of half timber construction are so closely connected with the structural execution, that it was not necessary to previously describe them. But in the stone construction of city dwellings, the horizontal subdivisions played no great part. Projecting plinths were often employed,

even in plain forms, but were more commonly omitted, even for costly structures. Occasionally occurred also the use of unusually large ashlars, or otherwise a change of structural material took place, as may be seen on the elevation of the Monastery of S. Gereon at Cologne in Fig. 262²⁰⁹. Particularly common in brick regions are some courses of granite boulders used in this sense. The arrangement of plinth mouldings is naturally quite excluded on palaces placed on steep hills, as on the Palace of the Landgrave in Marburg (see Plate next page 80). For such buildings the effect of a plinth is indeed produced by the battering substructure. Slight differences in the level of the site, on the contrary, are usually followed by stepped breaks in the slightly projecting plinth, since men also liked to place cellar windows in the higher parts by means of such breaks in the base, and even doorways in the mass of the base.

Note 208. See on this point the Essay of G. Lübke in *Verhandlungen der VII Tages für Denkmalpflege* at Brunswick. Berlin. 1906.

Note 209. From Bock, F. *Rheinlands Baudenkmale des Mittelalters*. Cologne and Neuss. 1870 - 1874.

224. Belts.

Belt courses never have such importance as in Renaissance architecture. They are often entirely omitted. Also if they exist, they form only narrow division lines on the entirely predominant surfaces. They mostly accent the portion of the window sill, either extending across the entire front or limited to the widths of the windows; more rarely and almost solely besides these "window sill courses", they serve to indicate on the exterior the position of the floor beams or to form a window cap. In the latter case, they preferably extend down at right angles beside the window lintel, whereby they substantially win increased importance. See the window groups in Fig. 313.

Their basal form in the Romanesque period is a thick slab, whose lower angle has some sort of moulding, a chamfer, cove or round, and it may then be decorated also with ornament. In the Gothic period the usual wash is the prevailing form, affording opportunity in its bottom cove for plant and figure

234 ornamentation. (Fig. 263 ²¹⁰). Instead of belts, particularly in brick architecture, also occur bands, that without projecting from the surface of the wall are emphasized by glazing, or painting, making possible a very bold subdivision of the wall surface. (Fig. 260).

Note 210. From Lutsch, H. *Kunstdenkmäler der Provinz Schlesien*. Text volume. Breslau. 1904.

225. Main Cornice.

The principal cornice is also generally not more strongly treated, at most being accented by the addition of a high slab as the support of the gutter. Widely projecting wooden cornices over a stone structure are less favored in Germany than in Italy, but are there handled richly and with charm, where the inclined projecting rafters are doubled and tripled by timbers placed under them, or where the ends of the ceiling beams are allowed to project horizontally, richly moulded and supported by similarly treated corbels. (See the main cornice in Fig. 335). A strongly projecting stone construction, either by large mouldings or great corbels, was only given to the main cornice, when it was required to support a projecting passage, gallery, or another projecting portion of the structure. As such an important upper termination, a series of battlements was likewise employed for purely decorative purposes in the most different regions; thus on the so-called Nassau House in Nuremberg, in the City Halls at Kalkar and Göttingen, on the Houses of the Patricians at Cologne etc. If such a row of battlements extended around a detached angle of the building, it was a rule to insert there a small and graceful angle turret for special emphasis. We give in Fig. 264 ²¹¹ one of the most charming solutions of this kind from the stone House in Frankfort-a-M., that the rich merchant Johann von Mehlen from Cologne erected in the year 1464; also as a plain form the termination of the roof of a house from Metz. (Fig. 265 ²¹²).

Note 211. From a drawing of R. Jung in *Denkmalpflege*. 1900. p. 29).

Note 212. From Schmitz, W. *Der mittelalterliche Profanbau in Lothringen*. Pl. 13. Düsseldorf. N.D.

226. Ornaments in Relief; Decorative Anchors.

235 226. Ornaments in Relief; Decorative Anchors.

As a further decoration of the surfaces are yet to be mentioned shields of arms in relief, and the figure or ornamental signs serving for the name of the house, which were freely distributed, just like the painted representations of a similar kind. A peculiarity of some regions further consists in this, that the iron anchors attached to certain floor beams and purlins to prevent the walls from bending outward, had at their ends frequently visible externally on the walls and gables, then being frequently wrought into rich ornaments. A series of Netherlandish examples are given in Figs. 266 to 272 from earlier drawings by Essenwein.

227. Connecting Arches.

Even if not exactly belonging to the treatment of the wall, there should be mentioned here the fact, that we find in cities the opposite rows of houses are connected by arches, for the purpose of preventing the facades from inclining toward the street; sometimes the wall of the house may have bent over afterwards. Also the intention to place gates as the ending of certain quarters of the city beneath it, is indeed frequently the reason for the arrangement of such arches, which we find indeed in small German cities, as well as in Italy and the East. Certain arches of suitable width also served as a bridge across the street for connecting the upper stories of two opposite houses, although it was generally preferred to construct them of wood, since they were more easily removed, if the connection must be stopped. That these arches, frequently repeated in long rows, substantially contributed to the picturesque appearance of the cities, requires no explanation; their effect for the quiet of the view of the city was likewise very valuable, when at the mouth of a side street they continued the course of the main street, and in this sense their disappearance from modern or the modernized ancient cities is strongly to be lamented.

Chapter 5. Openings in Walls.

a. a. Doorways.

228. Doorways of simple Character.

The most important basis for the artistic development of the ascending masses of the walls is found by the arrangement and the treatment of the openings, the doorways and windows, the first of which we desire to treat first. Corresponding to the very simple and narrow conditions of the early period, the Romanesque doorways of secular architecture are mostly of a modest type. They substantially serve only for the purpose of use; rich ornamentation, such as plays so great a part in church architecture in the artistic preparation for the interior with numerous recessed columns, ornamented enclosures and sculptures, is scarcely found in them. Likewise great doorways, that serve as driveways, are mostly without decoration, other than that afforded by their careful execution. On defensive structures ashlar with bosses were particularly liked for the enclosures of doors. At most was added there to the accenting of the impost line by a cap more or less richly treated, and breaking the angle of the opening by a plain moulding or a single small column. Examples of the simplest kind are to be found on the views of the Palace of the Wartburg (Fig. 56) and on the Monastery of S. Gertrude at Cologne. (Fig. 262). A somewhat more elaborate treatment is shown in the preceding Hefts of this Handbuch (Fig. 141, 1st edit, p. 206) giving an entrance doorway from Salzburg. The doorways, that serve only for persons on foot are strikingly small, according to our current ideas. In this a great part may be played by the practical endeavor for effective and easy protection -- both against enemies, as against injuries by the weather; but it is undeniably also of great comfort of the internal rooms, the feeling of habitable isolation, that is produced by the smallest possible opening in the enclosing walls. Men usually went so far in their restriction of dimensions in the middle ages, even when security and defensibility were not at all in question, that tall persons could only enter such a doorway in a stooping position, and they evidently regarded such small inconveniences as unavoidable in contrast to the artistic advantages mentioned. If such small doorways were

spanned by arches, then the imposts of the arch were regularly below the height of one's head, and closed tympanum, such as are so commonly shown by church portals, are scarcely found. We give a doorway from Castle Landeck, where it is placed in the main tower of the castle at 29.5 ft. above the ground. (Figs. 273, 274 ²¹³).

Note 213. From *Denkmäler der Baukunst*, published by the Drawing Committee of Students of Royal Polytechnic School at Berlin. Division 1. Jubilee Heft No. 26, Pl. 8.

It has a clear span of 2.5 ft. and a height of 5.0 ft. to the crown, and is enclosed externally by ashlar with bosses. The doorway arch is carried considerably higher in the interior, so that a rectangular door found space for closing it. Before the doorway two corbels project from the wall beneath the sill. They indeed supported the timbers of a light passage, that made access possible from an adjacent building, and could be easily destroyed in time of danger.

That the entrance to a rich monastery could also be treated without great ostentation is shown by Fig. 11. The width is about the same, that we now employ for a house doorway; the heavy plinth of the building is carried around the opening and produces a very massive enclosure.

229. Doorways from Münzenberg and Gelnhausen.

Doorways experienced a richer treatment in the late Romanesque epoch, which served for the access of the public to the imperial and princely palaces. Fig. 275 ²¹⁴ exhibits the lower entrance doorway to the Palace in Münzenberg, it is covered by a trefoil arch, enclosed by a weak moulding, which passes into the angle at bottom in curved form. One of the richest examples is the entrance doorway to the Palace in Gelnhausen (Fig. 276 ²¹⁵), where above a jamb with triple columns and within an enclosing semicircular arch is found a richly decorated trefoil arch as the upper ending. As a simplified imitation of this splendid doorway appears the middle entrance in the City Hall at Gelnhausen (Fig. 207), again spanned by a trefoil arch.

Note 213. From Naehr, J. *Die Burgen der rheinischen Pfalz*. Strassburg. 1887.

Note 214. From Moller.

Note 215. From *Denkmäler der Baukunst*. Published by the

Drawing Committee of Students of Royal Polytechnic School at Berlin. Heft. 1. Jubilee Heft. No. 26. Pl. 8.

230. Smaller Arched Doorways of the Gothic Epoch.

Likewise in the gothic period is the enclosure of the smaller arched doorways by a plain moulding generally the rule. In contrast to the earlier forms, aside from the pointed form of the opening, the mode of treatment is changed to greater grace and directness, as shown by Fig. 277, a small portal of the Franciscan Monastery at Bößen. To this is added in the time of the late Gothic the enrichment resulting from the intersection and penetration of the different mouldings. They occur first at the impost and the crown of the arch, but finally often extend also beyond the line of the arch to a rectangular enclosure, as in Fig. 278 ²¹⁶, a doorway in the south wing of the cloister at Bebenhausen. Other enrichments are produced by figure or decorative ornaments, shields of arms etc. above the doorway arch of this form, arranged in a separate enclosure as crowning the doorway. Thus at the entrance to the stairway of the City Hall at Marburg, where in the lower field of the addition appear the city arms and the name of the city supported by an ape, above being the arms of the landgrave, protected by S. Elisabeth, in splendid and animated modeling. (Fig. 279 ²¹⁷).

Note 216. From Paulus, E. Z. Die Cisterzienser Abtei Bebenhausen. p. 130. Stuttgart. 1836.

Note 217. From the Author's drawing.

A quite peculiar form has then resulted in many German cities from the custom of ^{sitting} ~~sitting~~ before the house doorway after the completion of the work of the day, to exchange greetings and talks with neighbors and passers. In many and especially the north German cities, this led to the arrangement of raised seats before the house, the so-called stoops; elsewhere and particularly in upper Saxony, small semicircular seats were sunk or recessed in the sides of the doorway. The older form may be that, which we find on the so-called Provost's House of the Cathedral at Meissen (Fig. 280 ²¹⁸) with seat niches recessed in the wall beside the portal. This entire design of the doorway otherwise gives us a representation of the rich and very developed form world, with which late Gothic

art undertook to solve such new problems shortly before the appearance of the Renaissance, and probably already aroused by its competition.

Note 218. From the Author's drawing.

But it was more commonly usual to combine the seat niches with the jambs of the doorway, as appears on a house at Naumburg (Fig. 281²¹⁸), which bears the date of 1520 for its erection on the impost stone on the right side, gracefully sculptured in the form of a canopy.

232. Larger Arched Doorways.

Besides the arched doorways open for their entire height, toward the end of the Gothic period are also occasionally found portals of greater width with closed tympanums. But they differ from the similar church portals in that, the middle pier, indispensable in the latter, must be omitted, to make it possible to drive through. Consequently for the larger free spans the unreliable horizontal lintel was replaced by the segmental arch.

Fig. 282 shows one of the arched doorways, such as Hans Behaim created about the year 1500 on the City Hall in Nuremberg and on the so-called Imperial Stables, an old grain storehouse. The doorway of 7.5 ft. high is enclosed by a broad moulding, that is arranged to produce the richest intersections of its rounds, almost lying in a single plane (Fig. 283). Likewise the accenting and graceful development of the lower portion is characteristic of the art style of that time; of the extremely fresh and animated treatment of the shields of arms represented on the tympanum, one small illustration can scarcely afford a sufficient idea.

More imposing bidnity was received by the outline of the doorway, if it were crowned by a gable or finial, similar to the main portals of churches. Examples of these are very scarce for the earlier time; on the contrary in the late Gothic such enrichment frequently occurs, preferably in the form of a recurved or keel arch, richly beset with crockets and cross flower. We give as one of the most beautiful German examples the main entrance of the so-called University, the ancient Collegium Majus at Erfurt. (Fig. 284²¹⁸).

233. Doorways in Brickwork.

233. Doorways in Brickwork.

North German brick architecture in the beginning of the Gothic period freely accepted the aid of the gloomy severity of granite for secular doorways, when it would produce a stronger impression. Fig. 285 shows the entrance to the main Castle of Marienberg, the jamb and inner part of the arch being²⁴² constructed of large and very carefully wrought granite ash-lars. A trefoil arched enclosing band of brickwork, whose ground is covered by stucco, and some edge courses surround the arch and give to the whole a light ornamentation without disturbing the impression of severe restraint. The great high niche, recalling the "high gates" of ancient oriental palaces, increases the impression of the but moderately large doorway to overpowering magnitude.

In the later time, brick architecture also preferred a richer form of portal. Figs. 286 and 287²¹⁹ give the upper portion of the western entrance doorway of the Neustadt City Hall at Brandenburg. Likewise here by the placing of a segmental arch beneath the pointed arch is formed a tympanum, which is filled by tracery of terra cotta, the openings permitting the ground covered with stucco to appear. Similarly treated²⁴³ spandrels extend the outline of the upper portion of the portal to an enclosed rectangle, and a rich coloring on light and gleaming colors make even more prominent the grace of the rich ornamental parts in contrast to the dark color of the stucco ground.

219. From Adler, F. Backsteinbauwerke des Preussischen Staates. Berlin. 1861-1898.

234. Doorways with horizontal Lintels.

Besides the arched doorways of small width are found those with straight lintels, often treated in the simplest way, as shown by the views in Figs. 165 to 167. An enclosure by a simple angle moulding is frequently added, and is occasionally enriched by capitals on the jamb. (Fig. 288²²⁰).

Note 220. From Viollet-le-Duc. Vol. 8. p. 465.

A special and much employed form is then produced, when the free length of the straight lintel is reduced by corbels. The beautiful late Romanesque portal of the so-called Parsonage in Gelnhausen (Fig. 289²²¹) exhibits, how this motive of

bold members of the jamb are carried around the corbel. In later times it is more usual to insert the corbel in the angle of the rectangle as an independent member. (Fig. 290²²²). Very favorite and common for rectangular doorways is further a more ornamental handling of the lintel of the doorway, whether there be added a blind ornamental arch in the form of an arched doorway (Fig. 291²²²), or it be decorated by arms, tracery, or other ornament within a rectangular enclosure. (Fig. 292²²³).

Note 221. From the Author's drawing.

Note 222. From Schmitz, W. Der mittelalterliche Profanbau in Lothringen. Pl. 42. Düsseldorf. N.D.

Note 223. From the same. Pl. 63.

Very rich forms were then produced in the later time of the 15th century by increasing the enclosing mouldings and by the formation of developed intersections, as well as by other ornaments on the lintel of the doorway. To the simpler forms of this kind still belongs Fig. 293 from a house on Cracow, where the arrangement of very bold corbels is combined with the form idea of intersections of mouldings; by the stepped corbellings the members are brought to a very effective upper termination. Moreover, these upper endings gave the stonecutters opportunity to enrich the intersections of the mouldings in the highest degree by a peculiar course of the lines, and thus to permit their art to appear brilliant in a very striking manner. We give in Fig. 294 such a lintel from the Castle at Cracow, one of the richest of its kind, on which the transition from this mode of decoration to a kind of geometrical surface ornament plainly appears. Fig. 295 gives a lintel from the City Hall at Cracow, on which to the nearly as rich intersections of the middle portion is added the use of arms as ornament.

A fourth Cracow example of a doorway, which is still found in the Collegium Jagellonicum (Fig. 296), again exhibits the same mouldings and like intersections, as an added decoration is a low arch in the form of a depressed keel arch with two finials, treated in the greatest delicacy with the quite fabulously developed and skilful chisel of that time.

b. Windows.

b. Windows.

235. Form of Window depended on the Need of Light and Mode of Closing.

The arrangement of the doorway, aside from the ornamentation, is determined in form and size by its purpose. In the width and height of the opening for single doors on the one hand and for driveways on the other, scarcely any changes have occurred since the earliest times, and only the artistic treatment changed according to the taste of the time and the measure of the means at command. It is otherwise with the design of the windows. They form no part of the primitive dwelling, as we have seen at the beginning of our description, but are rather an innovation introduced from the South, and as today in the country so many peasant's houses have a kitchen without windows, which receive not a dim, but an abundant light through the opening in the ceiling for removing the smoke,²²⁴ thus such an arrangement of the principal room in the middle ages may be assumed as very common. In opposition to very ancient custom, the window was pierced only in the course of time. Accordingly it was gradually developed from very simple beginnings to the important and richly treated source of light, as we find it at the close of the middle ages. Of great influence therein was the need for admission of light, which strongly increased according to time and opportunity. In general, the farther back we go into the beginning of the development, it was smaller than today, corresponding to the smaller importance, that reading, writing and other finer occupations then possessed. Yet strong differences are to be noted, in so far that for the state halls of princely courts and similar rooms evidently a greater abundance of light was required than for living rooms, where in regard to the winter cold penetrating through the window, greater light was willingly omitted. Then the development of the window stood in intimate connection with that of its closure; it is therefore necessary in describing the forms of windows, to pay attention to the mode of closing them.

Note 224. See *Das Bauernhaus im Deutschen Reich und in seinen Grenzgebieten*. Published by the Society of German Architects and Engineers. Leipzig. 1906. -- The arrangement of

the kitchen shown from the Province of Brandenburg (Pls. 4, 5) east of the Oder is also not rare farther west, for example in the north settlement quite near Berlin.

236. Palace Windows without any Closure.

Entirely open and without means of closing, the light openings in palaces of the earlier time were arranged in the form of rich galleries of columns, a beautiful form, where men are doubtful, whether to designate them as windows or arcades. We have before mentioned the reasons why men then suffered the defective protection from the weather, and give here some examples in detail, on which may be established the lack of all arrangements for closing them.

Fig. 297 ²²⁶ gives a window opening from the Romanesque Palace of Castle Münzenberg. Strongly diminished small octagonal columns with widely projecting impost stones bear the plain window arches. The entire group is enclosed within a richly moulded rectangular recess on each side of the wall. The strongly projecting caps of the columns employed here and also on the upper row of windows on the Palace of the Wartburg (Fig. 298 ²²⁵) were improved in the 11 th and 12 th centuries from the tasteless beginnings of the Early Christian period in the treatment of richer windows; particularly in the perspective view do they have a very picturesque effect by the contrast between the slender supports and the heavy arches, between which they form the transition. Figs. 46 and 105 exhibit their strong perspective effect; Figs. 24 and 25 likewise show how this effect is even enhanced by the addition of fanciful and symbolical figures of animals.

Note 225. From the source mentioned in Note 55, p. 71.

Note 226. From Moller. *Denkmäler der deutschen Baukunst*. Pl. 3. Darmstadt. 1851.

237. Grouped Windows.

The problem of supporting the arched openings of heavy enclosing walls on slender columns, was also solved in another manner. In Fig. 299 ²²⁵ is represented the lower window from the Palace of the Wartburg, divided in four parts. The middle point of support is there strengthened by doubling the column, and with the aid of a light corbel block it bears two enclosing arches of the entire thickness of the wall, in which

the arches of the separate window openings are inserted merely as light subdivisions. But the richest is the arrangement of such windows, if their columns stand behind each other in a double row, as in the ruins of the Palace at Gelnhausen, corresponding to the thickness of the wall. In this solution is the most animated contrast formed between the finely subdivided window opening to the heavy masonry of the wall, explained by the refined adjustment of all proportions to express the quiet and noblest symmetry.

238. Window Closure by Wooden Shutters.

But not for all rooms were men satisfied with such openings, at most to be closed by curtains; men rather strove for better protection from weather in all living rooms, even if the artistically pleasing form of the grouped window divided by free columns. The means for this was first offered by wooden shutters, that shut against a smooth rebate of the masonry behind the columns, and for wide windows consisted of several leaves connected by hinged iron bands.²²⁷

Note 227. Further information on the arrangement of such old window closures may be found collected in Ostendorf, F. Ueber den Verschluss des Profanenfensters im Mittelalter. Z. Zeitr. der Bauverw. 1901. P. 177 et seq.

That they formerly existed is frequently only proved now by the hinge pins only remaining in the wall, on which then hung, or even only by the holes in which these were once set, as at the window at Münzenberg, given in Fig. 302²²⁶. But more commonly the shutters did not shut flat against the wall but in a rebate of rectangular form, which then encloses the window like a recess, as may be seen in plan on the Münzenberg windows in Figs. 301, 303²²⁶.

It is characteristic of the architectural inclinations of the middle ages, that these lower windows at Münzenberg indeed exhibit an amount of light exactly corresponding to that of the upper windows, but are developed with a substantially heavier impression by the greater width of the jamb and the greater diameter of the middle column. Very characteristic for the 12th century are also the wide moulded enclosures of these windows, whose members are animated by chessboard patterns and by zigzag decorations, and are elsewhere ornamented

by graceful foliage and scroll work, as for example on the H House at Metz described in Art. 102.

In order to not be delayed in opening the shutters, it was usual either to make the internal window lintel curved and higher than the external one, or to give it a straight horizontal form. In Fig. 302 such a horizontal lintel is arranged in the simplest way by the insertion of a wooden timber. Similarly on the City Hall at Dortmund, the internal window recess is covered with wood.

239. Windows at S. Antonin and Münzenberg.

Figs 304 and 305 ²²⁸ give an example with arched inner covering, only peculiar in that under the influence of the antique remains then indeed abundant in southern France, a straight lintel appeared on the exterior instead of the arched covering of the window, and then is not at all antique in the rectangular enclosure of the entire window group. The long row of slender columns is there interrupted by stronger piers at regular distances, which are externally decorated by Byzantine conventionalized forms, and produce a substantial enrichment of the impression, but internally with strong projections and intermediate segmental arches bear the load of the upper wall, as well as afford a convenient support for the shutters. This endeavor for convenient closure occasionally leads to replacing the free columns by rectangular piers, as on the windows of the later early Gothic palace in Castle Münzenberg, placed beside the earlier building.

Note 228. From Viollet-le-Duc. Vol. 6. p. 93.

As shown by Figs. 306 and 307 ²²⁹ they each consist of three small pointed openings, externally enclosed by a larger trefoil arch, internally by a deep niche with segmental arch. A All external angles are bordered by rounds; on the inside only, the two middle piers are slightly splayed.

Note 229. From Moller.

240. Windows of Romanesque Living Rooms.

Simpler than the great assembly halls are also the smaller living and useful rooms of the Romanesque epoch in the arrangement of their windows. In Fig. 308 ²³⁰ is reproduced a window of castle Ortenberg in Alsace, which indeed owes its small dimensions to a care for defense, but by the addition of a s

seat niche affording space for several persons, it shows that the room lighted by it must have served as a living room. All shutters are lacking.

Note 230. From K  her, J. Die Burgen in Elsass-Lothringen. Heft 1. Strasburg. 1886.

We give in Fig 309 a window of the Niederburg at R  desheim erected for very distinguished occupants, likewise of even greater simplicity. These windows are inserted in a niche in the masonry, of which the entire building is constructed, and are made of plainly cut stone with sills, side and middle mullions, as well as a high lintel slab, in which are cut the arched caps. Directly behind the stone enclosure of the windows are inserted stone blocks at each side in the interior at about the middle of the height. One of these has a square recess extending somewhat above the middle, the other a perforated opening, which corresponds to a slot lying in the wall behind it. Thus a thick wooden shutter could be inserted in the niche against the window, then being fastened by a wooden bar, which remained in the slot in the wall, was then drawn out and inserted in the opposite short recess, thus being fastened, just as the case for the leaves of the door, which was represented in Figs. 152 and 153 of the preceding Heft. (1st edition). This arrangement has only remained unchanged on a few windows of the Niederburg. It appears that formerly on some windows, two such bars were provided. But on others the openings in the inserted stone blocks are less deep on both sides, so that a bar cannot be slid into the wall; it was rather pivoted at its middle at the centre of the shutter, so that one end passed upward and the other downward into the openings, if the shutter was to be fastened.

241. Glazing of the Windows.

Although these windows belonged to buildings in which means were not spared, all without detriment to their architectural beauty, from our standpoint of comfort, have something unusually imperfect, in that with closed shutters, not only cold, storm and rain, but also light was shut out. Small openings for light could indeed be cut in the shutters. Even if no example of this is preserved to us, then from the similar openings in old doors may we indeed form an idea of the lighting

so produced. Much light was not secured in this way. We must conclude from this, that actually the need of light in those times was only quite small, and with this entirely agrees, what we learn about the closing of such openings for light from documents and old descriptions. Accordingly the use of glass, even if its manufacture was again begun after the 10th century in the monasteries, very long remained a privilege of the churches, and indeed at first only the richer and more important. The difficult conditions of transportation in those times make this entirely apparent. And if the German court poets of the 12th century usually mention glazing, then in this is to be seen rather a poetic transfer of foreign and southern customs, than a description of actual native conditions. Only with the 13th century was glazing gradually introduced into the castles of wealthy owners, cities and villages. Until then the openings for light, of whatever kind and dimensions, were closed in secular architecture as a rule, not with glass, but with sheets of horn, bladder, paper, parchment, transparent linen fabrics etc. And these substitute materials remained in use till the 14th and even the 15th century, not alone for the poor, but even in public buildings, as we may show by the city accounts of Berne, Basle, Hildesheim etc., there from very different regions. 231

Note 231. See Heyne, M. Das deutsche Wohnungswesen. p. 235 et seq. Leipzig. 1899.

279 242. Openings for Light above the Shutters.

But meanwhile the advancing civilization in time required the arrangement of larger light surfaces in the window shutters of dwellings, and we have to follow the changes, which resulted therefrom for the forms of windows. Retaining the window shutter, which was recommended by its defensive use, a separate admission for light could be effected above the shutters. This was attained in a very simple way, when for an arched top of the window, its upper portion was cut off by an iron bar beneath. Then could this upper portion have a fixed glazing, after the manner of church windows; the lower part was closed by rectangular wooden shutters, movable. Such windows are found on the beautiful early Gothic Palace of Wildenburg in the Odenwald, still in the form of rich columnar

arcades, ²³² in which the decorated side is turned to the interior and the shutters close outside. This arrangement was then retained in certain regions until in the Renaissance period, also after the introduction of the light shutter composed of bars, in spite of the imperfect closure obtained by the shutter of narrow iron bars. But it was more usual and monumental to make these light openings independent windows of any form over the rectangular ones closed by shutters. Such arrangements are found in the dormitories of many monasteries, like Arnsburg in the Wetterau, S. Gereon in Cologne, and in Altenberg; but its general introduction was hindered, because it assumed a very considerable height of the room, as such as seldom existed in mediaeval dwellings. But very much more convenient and handy was this form of window, if the separate parts were brought close together, so that the supporting portion of the wall was reduced to a narrow stone mullion. To the earliest examples of this kind belong the very carefully treated window groups, which introduce an almost too abundant light into the rooms lying next the garden in the Overstolz House in Cologne.

Note 232. See Ostendorf.

243. Windows in the Overstolz House at Cologne.

We give in Fig. 310 ²³³ such a window, or rather a group of four such windows, which above a low parapet for widths of 2.5 ft. have a height of nearly 9.8 ft.

Note 233. From Boisseree.

To subdivide this height an intermediate lintel is placed 5.7 ft. above the sill, which rests on the small columns, just like the lintel in Fig. 305. The upper part is then arranged for glazing, as evident from the groove for glass in the section; on the contrary, the lower part shows externally on the court side a rebate, in which wooden shutters were inserted. Even if these were closed, as was indeed permanently the case in winter, the upper openings brought light into the apartment. But we can also conceive the shutters to have consisted of frames and panels; some of these might again be open and also could be closed by separate shutters and at the same time by glazed frames, so that according to desire and need, one might either on one side shut the glazed light into

the shutter or on the other the small solid shutter, an arrangement such as we find common in the 15 th and 16 th centuries on the lower Rhine, as well as in Flanders and the other Netherlandish parts of the old German empire. -- Somewhat larger yet is the arrangement in the other room of the same House next the court, that shows three windows of about 6.6 ft. clear width by 10.6 ft. in height, that are only separated from each other by two piers 2.3 ft. wide (Figs. 311, 312 ²³³). Here a simple lintel could not be inserted; for the vertical support also of the main and intermediate lintels must be set an intermediate mullion. Externally this window is entirely without ornament; only the rebates exist, in which the shutters closed, one for each double opening. The interior is the show side. The piers are there moulded, and the moulding is also carried around the lintel. In the recess thus formed are rounds like little columns, fixed to the mullions of the stone cross by headers, and set in the angles of the piers. In order to arrange a header on the lintel above for the round, that stands beside the mullion of the stone cross, both rounds on the lintel are mitred obliquely and their ends are set perpendicular to those of the pier headers. On the parapet are arranged those seats, which make the window recesses so convenient.

Note 233. From Boisseree.

This last example already shows how the system of arcade openings divided by small free columns passes into the form of windows furnished with cross-shaped stone mullions, whose development from the simple undivided window of the living rooms will now be considered.

244. Window with Framed Leaves.

A substantial perfecting of the admission of light was attained, when men made the movable closure of the window a framework instead of a board shutter, constructing it of small strips and filling it with leaded glazing or translucent materials. The form of window was influenced by the fact, that these narrow frames not more than $3/4$ to $1\frac{1}{8}$ in. thick could only be made of limited dimensions, about 2 ft. wide and at most 5.0 to 6.6 ft. high, further being of rectangular shape. Thus at first it was unnecessary to arrange upper wind-

windows; the windows of the living rooms then took the proper form of a rectangular opening in the wall, furnished with rebates inside or outside to receive the sashes, and for a further architectural treatment being surrounded by a moulding of any preferred kind on the side without a rebate. By a series of such adjacent windows, which were then separated by stone mullions, by the addition of ornaments on the moulding enclosing the opening, and in the late Gothic time by rich intersections of these mouldings at the angles, very respectable effects could be produced. These were preferably heightened from the beginning of the development by giving considerable height to the window lintel and decorating it by sunken blind tracery. Examples of a simpler kind have been reproduced in the illustrations of the preceding Chapter. The graceful form in Fig. 313 ²³⁴ shows to what magnificence such an originally simple form might be developed.

Note 234. From Schmitz, W. *Der mittelalterliche Profanbau in Lothringen*. Pl. 56. Düsseldorf. N. D.

245. Rectangular Window with Transom; Window with Transom Bar.

Both an increased admission of light was provided by still wider openings, as well as a more imposing architectural effect was further obtained, if above the rectangular opening of the light sash of limited size, yet other openings were added, separated by a narrow stone transom bar. These were also rectangular in the simplest case, the form surrounded by a moulding or rebate, and this by the combination of two axes in each group, it formed the cross window, indeed the most general form of window in the developed middle ages. We see it in the previously given illustrations of the Grand Master's residence in the Marienburg (Fig. 101), on the Guild House Gürzenich and on the Etzweiler House in Cologne (Figs. 167, 230), on the citizens' houses from Steyr (Figs. 193, 195), in a triple arrangement on the University at Cracow etc. With the simplicity of form and execution, we may therefore forego the presentation of other examples. It should be only noted, that for high rooms several such transoms separated by such transomsbars were placed above each other.

The stone cross windows, in the place of which appeared win-

windows merely divided by mullions, where the height gave no opportunity for an intermediate transom, continued through the middle ages, and were still in use in the 17th century in Cologne, for example, indeed without mouldings and only having a rebate externally, in which might be set the shutter, ^{as} just for the first ones in the 13th century.

In France are found the stone crosses in the House of the Monastery of Cluny, for example (Fig. 116). On this building we see at the height of the transom bar a belt extending between the windows and carried around the upper part of the window by returned angles. Its origin had the motive, that the transom bars did not have the height of the usual ashlar courses, so their ends must either be inserted in another ashlar, or that on its account a similar low course must extend through the masonry. (Called a "rat course" in Nuremberg). This low course was then furnished with a cap moulding and was allowed to extend above the window as a hood.

Note 235. From Viollet-le-Duc. Vol. 5. p. 406.

246. Rectangular Windows with Tracery in the upper Opening.

The transom of such a cross window, like all further occurring rectangular openings, was regularly glazed in Germany: on the contrary in France, it was likewise fitted with movable leaves, according to Viollet-le-Duc's illustrations. In regard to the decoration of the lintel etc., it could be treated in all cases just like the previously mentioned undivided rectangular window. But for a richer effect instead frequently appeared a perforation of the tracery forms carved on the lintel in a complete round or even an ornamental window, separated from the lower window by a narrow transom, and which must naturally be permanently glazed. Fig. 314 gives a simple Gothic example of the first kind from Verdun ²³⁵.

We see a stronger solution of the second kind in the later illustration of the graceful gallery of Castle Vayda Hunyad. (Fig. 331). Such forms then further became the starting point for solutions of the richest kind, which compete with the tracery windows of church art in magnitude and richness of the forms. They only differ from those in nature, that a strong lintel separates the lower part of the window from the

upper regularly developed tracery, for the purpose of adding movable window leaves, whether sashes or shutters. Deep recesses in the walls frequently occur, in which at the sides were mostly arranged rather high stone seats, in order to make the entire arrangement more habitable and comfortable. In a strikingly beautiful and grand, also very severe development, we find such a window design on the Hall structure of Landgrave Hermann at Marburg. We give in Fig. 315 ²³⁶ the internal elevation, the section and plan of this window, and call attention, how the different thicknesses of the permanently glazed portions, and the externally closing shutters, produce an originality in appearance. We have there assumed board shutters for the lower openings, without denying the possibility, that these parts may also formerly have had glazed sashes.

Note 236. From the author's drawing.

247. Sliding Windows.

Some peculiarities of mediaeval forms of windows are yet to be mentioned in conclusion. In many provinces, as in the Tyrol and also occasionally in lower Saxony (Goslar, Duderstadt), Westphalia (Lippstadt) etc., sliding windows often occur instead of hinged sashes, where the movable sash may be slid into a recess in the masonry or sidewise before a fixed portion of the window. They afford the advantage of dispensing with the expensive iron fixtures, but however have not been generally introduced. Fig. 417 gives an example of such a closure from Castle Friendsberg with shutters; yet in their places were also found sashes with glass.

The windows of the domain of brick architecture were arranged to receive glazed leaves, where fixed glazing was not employed for assembly halls etc., a rectangular wooden framework of wooden mullions and transom bars being constructed in the arched opening, so that the masonry of the usually segmental tympanum rested on its upper rail. This wooden framework is about 4 ins. wide and 5 ins. deep, and is plainly treated as a rule; yet occasionally are also found richly moulded examples with lavishly carved forms of bases and capitals.

248. Stairway Windows.

A truly mediaeval conception appears in that not rarely the windows of stairways, in the closest connection with the form

of the interior, are furnished with obliquely inclined lintels, and frequently with parallel sills. We give in Fig. 316 ³²⁷ a window of this kind from a house in the Brunnenstrasse at Metz.

Note 327. From Schmitz.

249. Windows with Dropped Arches.

As a very peculiar treatment of form with piquant charm is then to be named the use of the "dropped arch", composed of a circular arch curved downwards. It found its richest treatment in upper and lower Saxony with broad and frequently intersecting mouldings and graceful base forms. The animated movement of the lintel in the definite examples, as on the city hall at Neustadt-on-Orla and on the State building of the Castle at Meissen (see Plate next p. 10), even adheres to the division of the lintel, so that instead of being straight and horizontal, it rises in curved lines.

250. Stone Dormer Windows.

An entirely original invention of northern mediaeval art is also the use of dormer windows with stone gabled enclosure, that finds its support on the front wall of the house. It forms one of the boldest means of subdividing the mass, and plays an important part in the development of the roof lines. Our view of Hotel Cluny (Fig. 110) shows them so arranged, that before them extends a tracery balustrade as a termination of the house proper. Considerably stiffer is the effect, if the entire dormer window is set in the same plane with the lower masonry, either not separated from this or only by the continuous main cornice. Our plate next page 110 exhibits the form of these dormers of the Albrechtsburg in Meissen, where they are placed quite near each other and play a great part. Likewise on the City Halls at Hanover and at Salzwedel ²³⁸, and particularly in the secular architecture of the brickwork provinces, as well as in the stucco architecture of Bavaria, they commonly appear. Especially rich are they developed on the French castles of the late epoch. Fig. 317 ³²⁹ reproduces a very richly decorated dormer window of this kind, that is found on the Castle at Josselyn (Brittany). There occurs the peculiar arrangement, that the windows of the upper story with doubled stone cross and finial, extend upwards far

above the cornice, so that only the low upper window with a stone cross and gable can be regarded as a dormer window. The side enclosure of the dormer window is represented by small turrets with high finials rising from a gable between four small blind dormer windows. To the gable of the dormer window correspond these finials as buttresses; but the simple treatment of the gable of the dwelling usual in France, to which attention will be called elsewhere, also appears here, and only a monogram is here added as a decoration of the triangular surface. The entire dormer window is extended so high, that its ridge intersects that of the main roof.

Note 238. See Stiehl, O. *Das deutsche Rathaus des Mittelalters*. p. 72, 79. Leipzig. 1905.

Note 239. From Viollet-le-Duc. Vol. 6. p. 190.

251. Cellar Windows.

Of smaller architectural importance for the general appearance of buildings are naturally the cellar windows; but since they are placed near the eye, they are usually treated with great care in the details. The thoughtful method of working in the middle ages, which was so lovingly absorbed in the peculiarities of every problem, developed a peculiar form in the endeavor to permit the light to fall as far as possible into the interior of the cellar. For this purpose the lintel of the window is often strongly inclined inward, for example on the City Hall at Villingen. On the City Hall at Cracow, the master inclined the grating as far as the lower edge of this inclined surface, then further treating the whole with a rich cove with entire consistency. (Fig. 313 ²⁴⁰).

Note 240. From Essenwein, A. *Das mittelalterlichen Kunstdenkmale der Stadt Krakau*. Leipzig. 1866.

252. Bay Windows.

If we examine the window recesses formed in thick walls and common in the earlier buildings, for example the dormer windows of the Albrechtsburg at Meissen, which with their great depth certainly form a small separate room, we appreciate the comfort for which one of these could be arranged. Also in spite of the smallness of the room, the view through the window is especially attractive; likewise is also charming the effect of lighting obtained in the room, if the light from t

the deep recess enters the interior. We may therefore properly understand, that in the 15 th century and especially in its second half, men allowed some windows to project externally from the walls on corbels, thus artificially forming a deep recess, that substantially increased comfort in the interior of the room as well as the picturesque appearance of the building externally. Fig. 319 ²⁴¹ gives an example from the City Hall at Perchtoldsdorf near Vienna. In very varied ways are formed the corbellings of these windows. They are mostly like consoles, stones of different sections projecting beyond each other, which are then connected by anchors, or a slab is laid on them, which at the same time forms the internal floor. Figs. 320 to 322 ²⁴⁰ afford various examples of such projecting stones, which were also employed to support galleries and other projecting portions of the building. They are from Cracow and found a new place in the restoration of the Collegium Jagellonicum there.

Note 241. From drawings of Essenwein published in Mitth. der K. K. Cent. Comm. zur Erforsch. u. Erhalt. der Kunst- u. Hist. Denkmale. Vol. 6. p. 190. Vienna. 1861.

253. Bay Window in the Court of the City Hall at Nuremberg.

Very commonly are such slightly projecting portions of the building also placed on a series of gradually projecting mouldings, as may be seen in pretty simple form on the projecting window, that Hans Behaim in the year 1515 built in the City Hall of Nuremberg, in the passage before the council room. (Fig. 323 ²⁴²).

Note 242. From a drawing, which the faithful coworker of Essenwein in the last rebuilding of the City Hall at Nuremberg, architect Waltraff from Gensbach, associated with him by the magistracy, prepared in the Building Bureau, and which he later also used with some changes in the work;-- Mummenhof, E. Das Rathaus zu Nuremberg (Nuremberg, 1891).

The enclosing wall of this passage next the court rests on an arch, and therefore the corbelling of the window must be so bonded in this arch, that an entire series of stones, on one side being five besides the closing joint, on the other two, thus seven large stones in all of the arch project from

it. In these is cut the profile of the corbelling and beside the latter is cut the section of the arch. Blind tracery covers the surface of the little structure. A decoration like a column and composed of twisted members animate the middle; the roof is a simple stone roof with slightly concave inclined surfaces; by its bonding into the upper masonry, it opposes the tendency of that corbelled mass to fall outwards. The entire small structure has the manifest purpose to enlarge the space for those, who had to wait before the council room. Therefore it finely completes the charming view presented by the small court of the City Hall to those, who pass through it lengthwise, as well as to those ascending the stairway to the council hall beside the small bay window.

254. Larger Bay Windows.

Generally these corbelled windows do not project very greatly from the face of the wall, as our examples show. But if the walls do not afford in their thickness sufficient space to provide the desired depth of the internal window recess by a small projection, then men did not avoid even greater projections, by which were then also produced a more animated subdivision of the external walls. Thus also occurred on the exterior rectangular bay windows of substantial importance. Their support is likewise frequently formed by projecting moldings, as on the charming bay window of the City Hall at Amberg.²⁴³ Also vaulted projecting courses of stones, whose visible surfaces are preferably decorated by rich ribs commonly form their support, as for example on the Castle at Büdingen, the City Hall at Alsfeld, etc.; but most favored was its support by an arch, turned between strong piers or consoles at the sides. One of the most famous and important examples is given in Fig. 324²⁴⁴. It is the so-called "Golden Dachl" in Innsbruck, which duke Friedrich "with empty pockets" built, and had adorned by rich painting and gilding, apparently to contradict the nickname given to him. The bay window rests on a low segmental arch, and above another projection bears a graceful open story.

Note 243. See Stiehl, p. 150 and Fig. 171.

Note 244. From Dollinger, C. *Architektonische Reise-Skizzen*. Heft 1, Pl. 5. Stuttgart. 1873-1881.

Opportunity for an entirely luxuriant development and the display of the most refined art of the stonemason is then given by the corbelling of a bay window on a house in Freiberg-i-B. (Fig. 325²⁴¹). We likewise see on this, how with a sufficient projection of the bay window might be afforded through side windows a view along the main facade.

255. Triangular Bay Windows.

The charm of such a view became so important, that men also then frequently sought to create heavy and massive bay windows projecting from the face of the wall, even when this was not desirable on artistic grounds. Fig. 326²⁴⁶ from the Castle of Schlegleritter at Heinsheim, gives the internal effect of a small bay window, that only required to have the small triangular middle portion project from the wall, in order to produce the desired outlook.

Note 245. From Dollinger, Heft 8, Pl. 5.

Note 246. From Paulus, E. Die Kunst- und Altertums-Denkmäler im Königreich Württemberg. Neckarkreis. Stuttgart. 1889.

256. Little Apses of House Chapels.

Special importance is usually obtained by the projecting "little apses" of the house chapels. The importance of the arrangement of a separate chapel in the mediaeval house and the forms assumed by it, we have to treat further in describing interiors; we only concern ourselves here with its external portion, projecting like a bay window, and which as a rule is intended to receive an altar. Indeed not rarely are these modestly arranged, and like the plain rectangular chapel bay of Castle Jufahl in the Vintschgau, are not to be distinguished from the favorite bay windows of living rooms. But if permitted by means at command, men liked to project them as half octagonal in the style of church choirs, and they then permitted the location of the house chapel to be clearly recognized from the exterior.

278 As for the earlier of these small apses, they are so simple, that we have to add but a few words to even the small illustrations represented in Figs. 37 and 70 of the preceding Hef of this Handbook (1st edition). They are semicircular with a stone roof, that of Landsberg having a round-arched frieze, several wall strips, as well as some variously treated windows,

and built on a moulded support like a corbel. The little apse of Trifels has a richly decorated cornice with arched frieze, a single window, and its support consists of two corbels connected by an arch and closed by a half vault extending to the interior of the tower. The little apse of the Chapel of Kamparhof in Cologne rests on a moulded semicircular substructure and has three painted windows; the roof was covered with slates. Still plainer is that of the Domkirche at Naumburg, built on a conical corbelling. Also quite simple examples are preserved from the Gothic period; such as that of the City Hall at Nuremberg (Fig. 226) and that on the University at Cracow. (Plate opposite p. 206).

257. Little Apsé from City Hall at Prague.

But in the course of the 14 th century, the architecture of these little apses was developed into true ornamental pieces. Thus the little apse of the house chapel in the City Hall at Prague, represented on the adjacent Plate, was executed with a richness previously unknown.

The lower story of the entire building has a considerable projection, that extends for the width of the apse, so that its projection only requires less importance, since a rectangular pier forms a special support. The transition to the octagon is so arranged above the capital of this pier, that vertical surfaces extend upward from the angles of the pier, in front being placed an upper narrow and slightly projecting trapezoid between two triangles, while half trapezoids of a similar kind occupy the sides. On the octagon thus formed, four wide corbels project, between them extending upward an inclined surface, so that a complete support is given for the cornice, from which is suspended a perforated arched tracery frieze. At the angles of the widely projecting cornice are formed heads as corbels, on which stand columns. Their capitals should bear figures at the height of the parapet, above which are placed attached rich canopies. Behind these is then developed an architecture of finials as far as the main cornice, connected with strong gables above the slender pointed windows. A tracery frieze in the form of a graceful arcade terminates the entire chapel and also the body of the apse at top, which receives the character of a spire by a lofty

pointed roof.

258. Little Apse from the Carolinum at Prague.

Nearly allied thereto is the little apse on the Carolinum at Prague (Fig. 328 ²⁴⁷), but which with less height is developed somewhat more in breadth. It is particularly the peculiar form of the substructure, which first attracts the eye. An octagonal pier supports it; a simple and large cavetto characterizes the projecting mass; but at each angle as at the middle of each surface, a rib rises from a corbel, forming a very animated outline by its freely projecting tracery.

Note 247. From a drawing in the Wiener Bauhütte.

259. Little Apse on the Parsonage of S. Sebald at Nuremberg.

Considerably smaller and especially lower is the beautiful little apse on S. Sebald's Parsonage at Nuremberg, which is even more richly treated than the two at Prague. We give it in Fig. 329 at the same scale as those in Prague.

Even the substructure is here ornamented by finials and gables, and it has five supports for figures. Richly subdivided and furnished with hollows animated by foliage, the projection rises above this pier. The little apse itself has finials at its angles; the parapet bears representations from Biblical history in high relief, and above them are arranged a series of canopies below the parapet cap. Rich and triply divided tracery windows fill the principal surfaces, again with figures above them in the spandrels. A cornice with cavetto, in which is found a band of roses, terminates the structure, that now bears a low roof, out of proportion, which in our drawing is raised to the usual ratio.

260. Other Little Apses in Nuremberg.

Likewise in regard to the beautiful little apse on Schlüssel-elfelder's Tower in Nuremberg, we must recall with a reference to Fig. 127, since there instead of the usual pointed roof is built a lantern for a constant light, an even steeper proportion being produced thereby, than elsewhere by the spires.

Even a third little apse of some importance was possessed by Nuremberg in the old Lorenz Parsonage court, which was again rebuilt in a copy on the new Parsonage court, using some of the old stones. It is simpler than the preceding and is

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represented in Fig. 330, but it likewise has a corresponding pointed roof; on account of the upper story, the copy must unfortunately be satisfied with quite a low roof. There should also be mentioned the otherwise very simple double small apses found in the former Augustine Monastery, now transferred with its remains to the Germanic Museum, and there rebuilt. The lower small apse belongs to the chapter hall mentioned in Art. 296 (Fig. 396), the upper one to the dormitory and is designated as the Chapelloof S. Augustine.

276
270 261. Little Apse on the Abbot's House at Maulbronn.

In conclusion we mention, with reference to the statements in Chapter 10 (House Chapels), at least in a small perspective drawing, the little apse in the Abbot's dwelling at Maulbronn ²⁴⁸, on account of the high substructure, necessary because the chapel was in the third story. Since it is not orientated, we should not designate this little apse as such, but as a bay window, were it not directly attached to the hall of the Abbot, which is not conceivable without a house chapel.

Note 248. Paulus, E. Die Cistercienser Abtei Maulbronn. Stuttgart. 1873 - 1879.

262. Bay Window at Vayda-Hunyad.

Meanwhile we have many bay windows, that are almost similar to the little apses. Since we cannot give many examples, we present in Fig. 331 ²⁴⁷ one of the most beautiful and richest examples of a bay window allied to the little apses, four of which are visible on the western side of the hall building of Castle Vayda-Hunyad (Fig. 68). These four bay windows stand in the middle of the defensive gallery and rise from the buttresses, that support the hall structure; like little apses, they have finials at the angles, between which and over a horizontal cornice, gables animate the upper parts of the surfaces, while entirely separated from them are stone cross windows therein. In order to take into account the warlike significance, at least in some degree, they are not glazed, but are furnished with strong wooden shutters, which are not opposed to peaceful use, if they were constructed as described in Art. 240.

263. Bay Window Towers.

263. Bay Window Towers.

297
275 In the entire domain of architecture various motives pass into each other by intermediate steps, and thus the bay window is combined with other motives. Thus for example, the picturesque effect of small stairway towers frequently led to this, that similar small towers, not containing stairways, are arranged at the angles of buildings or in reentrant angles of courts, whereby a room in each story receives an extension, which contributes much to the effect of the interior. The small towers are polygonal in plan and rise at the angles and on the surfaces of buildings, are sometimes limited to a single story, then having externally almost the appearance of little apses; but they are however only bay windows. As a rule, they are simpler than the real little apses; particularly the windows mostly exhibit the simple stone cross construction and have neither pointed arches nor tracery like church windows. Such a small tower of polygonal plan thus consists of a series of windows over each other. Therefore it could rise from the ground to beyond the roof like a small stairway tower, or it might even commence on corbelling in an upper story. We have illustrated in Fig. 332 such a tower from Innsbruck. Likewise a series of flat projecting windows were placed on the facades of houses as small towers.

264. Derivation of the word "Erker". (Bay Window).

All these designs are generally designated as "Erkers", however varied in form; in Nuremberg they are all exceptionally termed "Chorlein". (Little apse). The latter appellation is so far justified, since the oldest Erkers were actually Chorleins of house chapels. It is extremely probable, that the name of "Erker" is derived from these.²⁴⁹ For the mediaeval plural of arcus (arch) was "Arcora", which was also used for the apses of churches. The oldest German form of Arker, as well as the word Chorlein, leads us back to the corbelled apses of house and castle chapels as the origins of these charming portions of the building. Only a further transfer of the meaning occurs, in that in many provinces the luthern windows of the roof were termed Erkers or roof-Erkers.

Note 249. Heyne, M. Das deutsche Wohnwesen. p. 348. Leipzig. 1899.

c. Galleries and Open Porticos.

26b. Origins of Open Porticos.

219 From the south, with its fear of the scorching rays of the sun and for the dampness of rain, doubtless came the custom into modern secular art of arranging arched passages along the city houses. We must indeed derive their origin from the East; they then became naturalized first in Italy and southern France. Through the Tyrolese and Swiss cities, which as regulated and rich markets and resting places for the travel of the world at that time were particularly adapted for the transfer of southern customs, these also penetrated into the German cities, and were formerly more widely extended than today. Already in the South is it indeed rare, that they extend through the entire city; even more in the North are they restricted to certain principal streets for passage and traffic in the city, or to the perimeter of the market place. Thus at one of the most beautiful examples at Münster in Westphalia, they occupy only the long street of the "chief market", or in east German cities like Heilsberg, and in Bohemian cities like Budweis, they only extend around the rectangular marketplace or the ring. Men have conjectured, that in their introduction in the North the influence of the connecting passage was effective, which in imitation of antique porticos connected together the separate parts of the great Carolingian Palace. But it is indeed simple to conceive a direct transfer of the form, as it was only later developed in the South, in which as a difference from those more detached connecting passages, the lower gallery is entirely recessed into the house, and the upper living rooms are built over it. Whether this form was first developed in city streets or in the courts of princely palaces (see Avignon, Trient etc.), might be difficult to decide. It might very well be possible, that just the custom of having such open porticos in the courts of princes led to arranging them likewise in the cities. Indeed there they not merely afforded the comfort of a shady retreat from the heat of the sun; but they also widened the narrow streets, without taking from the houses more than the space in the ground story. They provided sale booths for these, and when we hear of "cloth galleries" etc., we can conceive that even the

sale tables were placed in the porticos, just as may still be seen in the trade galleries in Strasburg, Berne, Bâle and other cities. They further created for the house owner the possibility of making the ground story useful for sale rooms, that might even be without any connection with the interior of the house. Where these porticos were arranged, there were only exceptionally wanting open vaults behind them and next the street, but these mostly stood beside each other in rows corresponding to the arches of the galleries, and where a house had no entrance from another side, such was often left between them and was entirely separated from the vaults.

266. Dimensions and Construction of the Porticos.

The width of such porticos and their height vary within wide limits. Among those of the Tyrolean cities are found those, which are very narrow and mostly of unequal width, so that the average width of 9.8 to 13.1 ft. is diminished in some places to 4.9 ft. or even less. But also they indeed in many places extend beyond this average size to 16.4 or 19.7 ft. We find some, whose height does not amount to 8.2 ft., while others have heights of 9.8 to 13.1 ft. and even more. They partly have beam ceilings and partly vaults of the most varied kinds, according to the mode of construction of the houses to which they belong.

On this also depends the form of the front of the portico. Almost without exception the porticos open toward the street with arcades, in the earlier time with round arches, from the 13th century onward with pointed arches, which rest on round, square or rectangular piers, partly chamfered or otherwise subdivided. In general predominate the simplest rectangular piers, which often assume very stumpy proportions for bearing the heavy load of the facade; but also richer forms of piers of varied shapes occur, an example of which is given from the marketplace at Vercelli (Fig. 333²⁵⁰), built of brick. If men had good cut stone at command, then columnar forms were also preferably employed, at least for the intermediate supports. We give in Fig. 334²⁵¹ a beautiful and widely opened example from Metz, and refer to the representation of the City Hall at Münster in Fig. 217, where finely designed round piers of stumpy proportions bear the massive pointed arches

of the portico.

Note 250. From Stiehl, O. Der Backsteinbau romanischer Zeit. Pl. 17. Leipzig. 1898.

Note 251. From Schmitz. Pl. 27.

As an example of the southern form, we further give a small Gothic house from Serravalle, a beautiful little city North of Venice (Fig. 335²⁵²), notable for the lightness of the supports made of granite, by the well preserved rafter cornice of the edge of the roof, and the still plainly visible remains of the ancient painting.

Note 252. From my own photograph.

267. Porticos in several Stories.

The motive of the portico was considerably enhanced, when it was opened in several stories above each other. This fine opening was also not general on the exteriors of the houses; Venice possesses in the Fondaco dei Turchi a very early example, but that is then thrown far into the shade by the well known two story magnificent portico of the Doge's Palace. We give on the adjacent Plate a splendidly executed example from German soil, from Bruck-on-Mur, taken from the so-called Kornmesserhaus, apparently belonging to the former ducal court.

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282
288

The ground story has a height of 14.8 ft. including the thickness of the vault. The distance of the columns between centres amounts to 12.1 ft., the height of the shaft of the column is 5.2 ft., or 9.0 ft. with base and capital; the octagonal bases are simple, but the capitals are composed of a series of rich intersecting mouldings, changing in form on each column, which are attached to the nucleus. A rich subdivision, whose top forms a recessed gable, encloses like a keel arch the segmental arch. Above the columns, finials stand on consoles, that intersect the mouldings, but the cornice at top is now wanting, just as the cross flowers of the ogee arches no longer exist.

In the second story two upper arches correspond to each lower arch, resting on octagonal piers of red marble. The entire subdivision is thereby essentially smaller. The upper recurved arches intersect, but do not end in a cross flower, but in a stone like a console, on which stood an animal or a human figure. Blind tracery ornamentation on the lower span-

spandrels of the arches and extremely piquant perforated tracery balustrades of varied design complete the rich impression of the front side. To it corresponds the extremely animated treatment of the upper segmental vault (Fig. 336¹⁵²), which with its rib-work curved in plan, frequently intersecting and decorated by cusps and foliage bosses, presents one of the most artistic examples of its kind.

268. Porticos as Passages around Courts.

A particular importance was acquired by porticos as accompanying court plans. Even in the one story form, they differ thoroughly from the cloisters of the monasteries, for their arches are entirely free for passage, being without tracery or columns in them. But they here very frequently take the form with several stories, so rare in external porticos. For they serve on the one hand, as in the streets, as protected standing places in the lower story; but also in the upper stories permit passage between the different parts of the building. Thereby the simple purpose of utility appears more strongly beside the monumental effect, and we frequently find such court galleries in the simplest form, usually even built of wood. Thus the Castle of the Teutonic Order at Gollub in Prussia shows the two story passage, as usual for the seats of the order, executed in a very carefully constructed but entirely plain wooden construction. Richer and often completed with very charming carvings of the balustrade are the wooden passages in several stories in the courts in Nuremberg. Besides the execution in perishable building materials occur other simplifications; thus on the arched passage of the University at Cracow (Fig. 337), the omission of the separate covering of the upper passage, which is rather treated as an open passage, and is only somewhat protected from weather by the projection of the roof. The whole thereby acquires much in lightness of appearance; particularly the supporting arches are light and narrow. To this is added, that the vaulting of the passage is constructed in the form of cellular vaults without ribs. Thus by the placing of those graceful upper members on the short round piers are produced very peculiar solutions, some further examples of which are added in Figs. 338 and 339.

In a very independent manner, such court enclosures are developed in many cities of Austria. There is usually combined the national custom of projecting entire parts of the building on corbels with the arrangement of galleries in several stories, which gives to the peculiarly narrow courts a highly picturesque as well as a comfortable and habitable effect. In Fig. 340 ²⁵³ is represented as a characteristic example the court of a private house in the city of Steyr.

Note 253. From my own photograph.

Above the ground story project corbels supported by strong projections, and these support two galleries of masonry. Slender porphyry columns, very gracefully treated in varied forms, support their open arches and by means of stone cross beams, the tunnel vaults of the galleries. In the upper story is still a remnant of the tracery balustrade formerly existing; for the lower story the masonry balustrade may be regarded as original. Notable is also the boldness of the solution at the angle, which extends free and without a column, above the vaults abutting against each other.

Much more grandly are arranged the columnar courts of Nuremberg. There should be especially mentioned the great court in the Krafft House in Theresienstrasse, as a striking example, how men liked on German soil to interrupt the uniform quiet of such court galleries by the insertion of stairway towers etc., and how at the same time the stone architecture with arches of wide span in the lower story was united with the wooden architecture of the projecting roof. (Fig. 341 ²⁵⁴).

Note 254. From Gerlach, M. Alt-nürnberg's Profanarchitektur. Vienna und Leipzig. N. D.

Chapter 6. External Stairways.

269. Original and Simple Forms.

We have seen in the description of the earlier palace buildings, that men at first regarded the connection between the separate stories of the building as an external addition to the independent parts of the important internal rooms, and did not usually foresee the arrangement of internal stairways.

286 The execution of these ascents may at first be regarded as extremely simple; yet the appellation of "Stiege", which originally signified a ladder furnished with steps, was generally applied to stairways. As a difference from this simplest kind, men designated the rarer and more luxurious designs at first as "Greden", from the Latin word "gradus", the step. The preference for external stairs prevailed during the entire middle ages. It permitted in the simplest way the internal arrangement of the rooms, particularly in the great hall structures, to be kept entirely independent from the arrangement of the stairs, and with skilful construction also afforded a pleasing animation to the exterior.

270. Open Stairs of Wood and of Stone.

Usually and even later, men were satisfied with plain wooden stairs. Thus on the City Halls in Gelnhausen, Goslar, Dortmund etc.; also luxurious palace structures, like those illustrated by us at Münzenberg and Gelnhausen, can scarcely have possessed any but wooden external stairs. Naturally, nothing of these has been preserved; even of the stone external stairs at the Palaces of the emperor at Goslar, in Brunswick, and at the Wartburg, there have hardly come to us such remains, that we can again mentally restore the general arrangement. Even with entirely monumental form, they were plain in their details, and were calculated purely for the effect of masses. Only the upper end, as at the side stairway structure of the Palace of the emperor at Goslar, may have been frequently covered and adorned by graceful windows with columns.

287 A somewhat later arrangement is the famous stairway of the Castle of Montargis, an attempted restoration of which is given by Viollet-le-Duc.²⁵⁶ In contrast to the stairway elsewhere attached to the facade of the building, it rises with a flight placed at right angles to the facade of the great hall,

down to the court, sending from a landing other short flights to right and left. It was covered by a wooden roof resting on slender stone piers. With such a covering was then preferably busied the progressive architectural development of such stairways, and just here German architecture succeeded in extremely charming and picturesque forms. It is very common for only the area of the top to be roofed, then being further accented by extending higher a bay window or clock tower, as in Dettelbach-o-M (Fig. 342 ²⁵⁵), or in the Renaissance period at Mosheim in Alsace. Men proceeded otherwise, as already seen at Montargis, the ascending flight being under a roof, which was then supported by wooden posts and wooden cornice, or in more lavish examples, by stone posts and arches. Perhaps the richest design of this kind is the external stairway of the City Hall at Pößneck in Thuringia, executed in the luxuriant forms of the late Gothic; rising at two sides, covered by cross vaults, and at the top being connected with a corbelled pulpit for announcements.

Note 255. From Grisebach, A. Das deutsche Rathaus der Renaissance. p. 113. Berlin. 1907.

Note 256. Viollet-le-Duc. Vol. 5. p. 290.

We give in Fig. 343 ²⁵⁷ a plainer example, the charming ascent to the Sexton's House of the City Church in Steyr. Four slender stone supports, set on the balustrade of the stairs, bear the arches of the roof and also its tunnel vaults by means of horizontal stone beams. In a similar manner the substructure of the stairs is vaulted underneath, in order to afford convenient access to the lower story.

Note 257. From my own photograph.

288 271. Flights of Steps in Courts and Porticos.

With open stairs by their form may also be reckoned the beautiful designs of steps, which are usually found within courts or even in great covered porticos. In Tyrolese peasants' houses and castles picturesque examples are abundantly preserved to us, frequently connected with corbelled galleries and vaulted porticos, mostly richly supplied with tracery balustrades or gracefully wrought iron railings. ²⁵⁸ Also the City Halls at Freiberg-i-B, Amberg etc., possess beautiful designs of this kind. Certainly, all stairs, that were built in the

north are narrow and steep, measured by our present scale. On the contrary, we find more dignified general proportions, and particularly less steepness in southern countries, adding such a design from the Audiencia at Barcelona in Fig. 344 ²⁵⁹.

Note 258. Some examples from Sterzing and Klausen are found in Steffen, H. *Baudenkmäler deutscher Vergangenheit*. Heft 5, 6. Berlin. N. D.

Note 259. From Joly, H. *Meisterwerke der Baukunst und Kunstgewerbes in Spanien*,. Vol. 1, Pl. 63. Wittenberg und Leipzig.

272. Winding Stairs and Stairway Towers.

In the later epoch of the middle ages, winding stairs were preferred to straight open flights, which extended partly in the street and partly in the court outside the wing of the building, against which only were they placed. Since they mostly rise high above the edge of the roof and are covered by a pointed roof, they have the form of small towers and substantially contribute to increase the picturesque character of the buildings. We refer to what is later said in Chapter 12 in regard to the stairs as a part of the interiors of buildings, and we extend that here in regard to the external appearance, so far as with a mode of construction peculiar to winding stairs, the exterior can be considered separately from the interior.

289 These small stairway towers were externally round in the earlier time, but at least from the beginning of the 14th century onward were in part hexagonal or mostly octagonal. The simpler ones exhibit only a number of oblique windows, rising obliquely above each other. Considerably richer became the effect, if the windows were larger, so that they occupied nearly the entire side of the octagon, leaving only a plain angle pier, and if they were subdivided or had a stone cross. A further development occurred, when the octagonal angles of the small towers were furnished with small buttresses, which were also arranged externally with inclined caps, tracery, parapets and other ornaments. Also corbels with figures often are added, over which rise rich canopies, or the angle piers are joined by arches, beneath which is arranged the tracery taken from church architecture, above rising the

complete equipment of finials and gables taken from the same source. At the top some 3 gables then have their roofs intersecting the pointed roof of the tower, or above a projecting cornice a tracery balustrade terminates it, or even the richly decorated battlements of a passage, which is arranged at the base of the pointed roof, or as a horizontal stone platform becomes the roof itself. Such small stairway towers do not always rise directly from the ground; they are partly carried upwards from variously arranged corbellings on the second or higher stories.

An example of a richly opened and unglazed winding stone stairway, that may be taken as an open winding stairs, was given in the representation of the court in the Krafft House. (Fig. 341). But these interiors were mostly glazed; their internal treatment then entirely corresponds to the winding stairs wholly within the interiors of buildings. As the greatest work of this kind may pass the splendid stairway tower of the Albrechtsburg at Meissen, as shown by our plan in Fig. 102, which aside from its great dimensions, acquires special importance by the vaulted passage in five stories extending around it. It was further terminated in the earlier time more pleasingly than by the projecting gables added in the 19th century, for above a low upper story furnished with small windows having dropped arches and crowned by a light horizontal cornice with gutter, the pointed roof rose in independent and charming lines.

Chapter 7. Roof and Gable.

a. Roofs.

273. Importance of the Roof.

The upper termination of the house, the roof, is well known to have played in mediaeval architecture, at least in the north, an incomparably greater part than in any earlier time. It was not only designed for the need of a protecting covering, but already in the earlier time was utilized by its imposing height to intentionally enhance the effect of the mass of the building. While in the Romanesque period men were satisfied with an inclination of the roof of some 45° or little more, the accenting of this effect of the mass led in the later development to ever steeper slopes of the roof, so that the angle of 60° may be regarded as the rule, yet many solutions also strove for even more pointed and steeper inclinations. From this considerable importance obtained by the roof, regarded purely as an architectural mass, were now developed a fineness of lines and a wonderful art of subdivision, which formed one of its greatest titles to fame, as an entirely new acquisition of mediaeval art. Thereby the roof became entirely fused in the general effect of the building; particularly for simple structures, it was transformed into one of the most effective and determinative means of expression.

274. Gable and Hip Roofs.

Already the plainest gable roof enclosed between gables forms not merely the combination of two inclined planes. Generally the feet of the rafters were set a certain distance inside from the edge of the roof, so as to prevent tearing out the gains, that hold them. When this recession was filled by a separate light framing or furring, an intermediate form was obtained at the border between the vertical wall and the inclined surface of the roof, which could harmonize both portions of the building by a steeper or lower inclination of the furring as needed, by a more abrupt or more gentle transition. Likewise the arrangement of hip roofs, the next improvement in the form of the roof, is treated in the sense of an animated mode of working suited to the particular case. The middle ages was not acquainted with the modern mechanical carpenter's rule without feeling, according to which the hip roof

by principle receives the same inclination as the corresponding gable roof. It produced an incomparably more charming effect, when it regularly gave to the hip roof a steeper slope, frequently increased almost to the vertical, that permitted it to adapt the lines of the hips and the length of the ridge of the main roof to the artistic requirements. Not seldom also a hip roof terminated in three sides of an octagon, such as shown by the representation of Schönbornerhof in Geisenheim (Fig. 86). Men especially understood in Germany how to give a strong and quiet appearance to the great surfaces of the roofs, even when broken by frequent dormers for the use of the attic rooms, for in the form treatment of these subordinate forms was exerted the most refined reserve, which is unfortunately often missed in our modern imitations.

275. Roof Additions.

For a richer animation of the masses were made large additions thereto, and especially polygonal bay windows, to accent the angles or even to break the longer sides. As at the example just mentioned or on the Schlüsselfelder House in Nuremberg, these might rest on lower corbellings; but frequently they form merely a true part of the roof, from whose surfaces they project. A good example of these, that by a subdivision of the roof produced by small means, could give to the simplest mass a strikingly animated effect, is presented by the H Hochzeithaus at Marburg, which we illustrate in Fig. 345. Still more powerfully is the roof surface animated by placing thereon transverse gable roofs, particularly if these rise above the cornice with a substructure in one or more stories as transverse buildings. The Castle in Meissen, the City Halls at Brunswick, Hanover, Saalfeld, etc., afford excellent information, how by such additions the mass of the building may be effectively enhanced, and at the same time be subdivided in the most striking manner. Finally occur attached stairway towers and bay windows with their pointed spires, here and there even boldly and pleasingly arranged roof turrets, 291 to complete the varied and fresh effect of the roofs. But it must be emphasized, that this very rich world of form is always so skilfully handled, that it is subordinated to the great principal forms of the roof. Not in free caprice, but al-

almost always in severely axial arrangement do these accessories subdivide the great surfaces of the roof, permitting its general forms to always predominate. The great gable roof everywhere forms the quiet background for the most animated play of transverse structures, bay windows, gables and turrets. To this essentially contributes the fact, that the harmony of these ornamental parts with the roof surfaces, just as already emphasized for the little or few windows, is increased by the great reserve in the detail forms. Great restraint in the projection of cornices, the sparing use of ornamental accessories, with the most delicate graduation in the course of the roof lines characterize these precious solutions. Their thorough study, which certainly concerns itself, not with books, but with the buildings themselves, leads into one of the most enjoyable and most profitable divisions of the world of architectural form; to pursue it is an imperative requirement for new creations of a similar kind.

276. Covering of the Roof; Straw, Tiles, Shingles.

For covering the roofs certainly predominated at the beginning of the development the use of building materials most readily provided, straw or tiles. Rural buildings everywhere and until the latest times, as well as city buildings of the earlier time, we have to represent to ourselves with thatched roofs. Naturally nothing remains of such ancient roofs.

Both regard for distinguished appearance, as well as the endeavor for greater security from fire permitted other modes of covering for better buildings to become prominent quite early. To the first condition only corresponded the use of spilt wooden shingles, which were already characterized by this name (*scindula*) as an inheritance from antiquity. They perhaps represent the oldest form of roof covering, by which our masonry buildings were covered, and this doubtless frequently continued in use in the later middle ages, as it is still at home in forested regions. It is likewise recommended by being easily obtained and prepared, which can either be done by the owner himself or by his servants. By careful selection of the wood and careful smoothing, so that moisture quickly flows away, a tight roof may indeed be made with these, which does not fail very quickly. Easily executed ornam-

ornamentation of the lower ends and varied painting, such as still is customary in Alpine lands, must make the effect of such a roof considerably richer. This indeed afforded the opportunity to also transfer the shingling to the vertical surfaces, an example of which may be found in the preceding Heft (1st edition, p. 242, on the representation of the Pfennigturm in Strasburg). Other beautiful examples of such use are also found in central France. Thus the porticos around the court of the Hospital at Beaune ²⁶⁰ have shingled surfaces; likewise the court of a prominent house in the street of S. Trinite at Troyes exhibits such a charming use of this mode of covering, that we reproduce it here (Fig. 346 ²⁶¹), although already Renaissance influences are there mixed with the traditions of the middle ages.

Note 260. See Verdier and Cottais. Vol. 1. p. 1 et seq.

Note 261. From my own Photograph.

But the endeavor for greater security from fire also already early commenced to supplant shingles on the houses of important persons in the country, as well from the closely arranged houses of the cities. For German cities we already have from the end of the 13 th century the earliest magisterial ordinances for the use of tile coverings of roofs; this requirement was indeed tolerably obeyed in the course of the 14 th century in the larger ones; in the smaller, the elimination of thatched and shingled roofs continued down to the last century, and it is still not completed in many mountain regions.

277. Slate Roofs.

The use of slate roofs for secular buildings in the middle ages was restricted to those regions in which slates could be easily obtained, or where they could be imported without great difficulties and expense. These must also have found employment in the Rhine provinces already before the middle ages.

At least on the Saalburg were found remains of roofing slates, which are regarded as Roman. On the form given to the separate slates in the early middle ages, we have no information; but we must assume indeed, that the usual and still continuing oblique German covering must extend back to a very early time. At least it must have been common generally at the close of the middle ages, and have been similarly treated at i

its borders as today. Even if we now doubt, that any slate roof now existing on any mediaeval building, be still original and unchanged, it must still be assumed, that even with numerous repairs occurring since the middle ages, the old mode of covering and the form of the slates were retained, even if originally they might have been different. But since we find them so long preserved in this manner, we must conclude, that they were also earlier employed likewise.

278. Metal Roofs.

Metal Roofs were formerly more common in church architecture than for secular buildings, where they were only on small accessories, turrets, bay windows etc. Where this mode of covering also found employment in secular architecture, its treatment was the same and indeed very plain, as likewise on the former. Meanwhile the usual lead coverings of the edges of slate roofs also gave opportunity for placing ornamental crockets of lead on the hips, for richly decorated ridges, and to furnish the angles and spires with ornaments. Certainly in most parts of Germany no great use was made of these decorative forms, since men preferred the unbroken lines; most of this decoration has also disappeared. Yet especially along the Rhine have remained certain portions, but which are hard to find, since the buildings are mostly restored, and thus the old and strongly weathered lead has been assigned to a new place, or is so concealed, that it cannot be found from below.

More than in Germany has such lead ornamentation been preserved in France, and it appears in the middle ages to have been more commonly produced, and in richer forms for use. We therefore select a French example from many, and give in Fig. 347 one such, which is found on the Hospital in Beaune, and the representation of which is taken from Viollet-le-Duc (Vol. 5. p. 283). The three details placed beside it are those of the cross flowers and of two foils beneath it. But in far the most cases, were also employed for metal roofs much plainer forms, simple foils placed on a wooden stem sheathed in metal, with light iron bars to support the wind vanes.

279. Tile Roofs; Concave Tiles.

Chiefly remains of tile roofs of the middle ages have been

preserved to us. We indeed have no more, which have not been repeatedly restored later and even recovered; but many yet remain, on which most of the separate tiles still date from the middle ages, with so many different tiles in museums and collections, both ordinary and ornamental tiles, that we could write quite a long chapter on the tile coverings of the middle ages, if we did not have to merely notice everything. Preferably are two methods of covering, with which we have met, and which proceeded beside each other from the beginning of the middle ages to beyond their close.

294 One is allied to the antique roof covering, where flat tiles with upturned edges found employment, and which were so fixed beside each other, that a concave tile was placed over the adjacent edges of each pair of tiles. Yet already at the close of the antique civilization, instead of the underlying flat tile, men also used concave tiles, so that the covering tiles lie pretty close to each other. Today and long since, men used for this method of covering the technical name of "nuns and monks"; but whether these appellations were already used in the middle ages is doubtful. The dimensions in which the separate tiles are made, are quite varied and in part are indeed considerable; just the oldest appear to be the largest. In the collection of the Germanic National Museum at Nuremberg are found fragments, which are $24 \frac{3}{8}$ ins. long and $10 \frac{5}{8}$ ins. wide, with a weight of 23.8 lbs. If one conceives these covered with somewhat narrower ones set properly in mortar, there are about 20.5 lbs. per sq. ft. This was indeed a considerable load, and it required a stronger framework of the roof, which was rare on the smaller houses, to support such a load. Medium and small concave tiles indeed produced a relatively lighter roof; but it still must have been too heavy for the ordinary framework; for in Nuremberg and likewise in Quedlinburg and elsewhere is not seldom found the case, that also with the use of smaller and thinner concave tiles, the upper covering row of "monks" were entirely omitted, and by good mortar alone in the joints of the "nuns" was produced a tight roof. For this it is to be noted, that the "nuns" were hung on strong laths by the knobs on each tile, but on the contrary the "monks" were mostly without hooks and were laid

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on the former, since otherwise the roof would have looked too rough, if knobs had projected from each visible tile. The knobs were easily broken off, even if tiles so burned were not at command. For fastening the "monks" only one means existed, that of punching a hole in them with a pointed tool, fastening them with an iron nail to the lath, and which could pass between two "nuns". All the different stages are visible in Figs. 348, 349.

280. Flat Tiles.

This first generally extended method of covering was from early times contrasted with a second, that with flat tiles, also here and there named "pocket", beaver-tail" etc., whose origin is to be sought in the wooden shingles, in whose place they appeared. In the course of time and in different regions, they received different forms, according to which, as for shingles, they formed different designs on the roof. Very ancient are the tiles represented in Fig. 350 from the country around Lake Constance, a considerable number of which are found in the Rosengarten Museum at Constance, and that may date from the 12 th to the 13 th centuries. They diminish from the top toward the point, are relatively thick, and their upper surfaces are slightly convex. Placed beside each other, they leave open a triangular space between them. Since then the next course does not completely cover this, but only the third course c, a bunch of straw was inserted, so that air and wind could not enter the opening between b and c and pass through the open triangle above a into the interior of the attic. Flat tiles of a very peculiar kind, certainly belonging to the 12 th century, have recently been found also during the restoration of the Cathedral at Wetzlar.²⁶³ They have the form of a rectangle with an added triangular point, and thus far surpass those just described in tightness of the covering; they are also very carefully made and have a light glazing on the points.

Note 263. See Stiehl, E. Zur Frage mittelalterlicher Dachdeckung. Denkmalspflege. 1906. p. 77.

In Nuremberg during the middle ages two forms were in use for such flat tiles, of which it would be hard to determine the older; the spade tiles (Fig. 351) or the pointed (diamond)

tiles (Fig. 352). If we take the former to be earlier, it has this reason for it, that they are somewhat more convex than the pointed tiles, which were partly made entirely flat. the covering of spade tiles forms a very attractive pattern, but if the convexity of the separate tiles be so great as for those esteemed oldest and attributed to the 14 th century, a are not airtight like those of Constance. If each tile a rests on the highest places of the row of tiles beneath it, then the point b falls over the lowest place, and thus the air and particularly the cold may penetrate under b into the attic room. That bunches of straw were employed in Nuremberg is not known. Since indeed the tiles are never mathematically plane, but even the best are a little warped, then indeed the tile covering is never completely airtight. It is well known, that at the lower edge, as well as on the ridge of the roof and at the gable ends, fragments of tiles are necessary, which the tiler now produces by cutting whole tiles. In the middle ages these portions were formed and burned separately. Thus to construct a roof with pointed tiles, plain tiles a and half tiles b at their beginning and end; thereon as many common tiles c as the roof required. At the ridge were necessary two shorter rows d and e, which were not hung on laths, but on the uppermost row of ordinary tiles c. As may be seen from the section in Fig. 353, a row of hollow tiles is set thereon with mortar to form the ridge. It also appears from this section, that such a roof always extends $4\frac{3}{4}$ to 6 ins. above the surfaces of the rafters, since at every place, aside from the lower edge, the tiles lie in three thicknesses. Thus it is always a quite heavy roof, that is produced by this mode of covering. The rain water falling on the individual tiles flows downward to the edge. Yet a large part of it runs along to the point, and only there falls on the tile lying beneath. Therefore at the edge of the roof, if the ordinary half tiles were used, a great part of the water was led to the gable, and thereby this became wet. Hence frequently special tiles f were burned, whose points lay at a distance from the edge and conducted to the surface of the tile beneath it. But the same end was generally more simply attained by raising the roof surface next the gable by wood strips

laid beneath. For the hips and valleys, tiles could be made in stock, since they must vary for each different inclination of the roof, and normal profiles of roofs did not exist.

281. Manufacture of Roof Tiles.

What particularly characterized the earlier mediaeval tiles is the carefulness of the work. The clay was evidently most carefully purified; for it is entirely free from every injurious ingredient and also from coarse gravel, extremely uniform and finely worked. The tiles are naturally struck in moulds, the knobs being very carefully modeled by hand and firmly attached while the tile was in the mould, so that by firm pressure the knob was joined to the tile, without altering its form. They must not be too wet, but be pressed in the mould with considerable force and be slowly dried. When they were about half dried, the upper surface was wetted again, and made as smooth as possible by means of a brush or the hand. To this treatment is it due, that all pores of the surface were filled and consequently no alges nor moss were formed, no dirt settling on the tiles, which the next rain would not wash off. The tiles retained their deep red color until today, and one can distinguish each mediaeval tile of a roof from the later tiles added in restorations, since all later tiles even if they retained the old form, were less carefully made and have therefore become black.

The two native forms of roof tiles in Nuremberg are not restricted to Nuremberg; they also occur elsewhere in entirely similar kinds. But also those with semicircular, segmental and square ends are found. Fig. 354 is a representation of the roof covering produced by a tile, as well as the tile itself, like several found in the Monastery of Heilbronn, yet which appear less carefully made, than as just stated.

282. Colored Glazing.

Already from these examples is apparent how varied was the ornamentation, which the roof might receive from the shape of the tiles alone. But color was then added. Men covered the portions of the tiles remaining visible on the roof with colored glazing, thus in Austria, Tyrol, Switzerland, Swabia and 299 Alsace, particularly with green, reddish brown, yellow and white, and so could form colored bands, lozenge and zigzag

patterns on the roof, as well as similar simple rug patterns. Such a frequently splendid decoration of the roof always extended over the entire roof surface, so that its unity of effect remained undisturbed. In taking up again this mode of ornamentation, this has not always been considered, very much to its injury.

283. Decoration of Ridges and Hips.

Since generally in the middle ages, men attached great importance to the appearance of the roof, they occasionally sought to give more life to the outlines of tile roofs by ornaments. The ridge line already received animation thereby, that the knob sides of the hollow tiles were inserted within each other, as well as their diminished ends. But men also loved decorated ridge and hip tiles produced by special forms.

We give in Fig. 355 the representation of a ridge, which came from one of the former foundation buildings of the Minster at Basle, where also the hips are decorated by strongly projecting crockets, while Viollet-le-Duc found this on S. 300 Fides at Schlettstadt; these ridge and hip tiles are glazed green. The hip tiles represented in Figs. 356 and 357 are from Schwäbisch-Gmünd, and that represented in Fig. 358 came from Villingen to the Germanic National Museum. Meanwhile peculiar animals and men in comic positions are also employed as forms of such hip tiles.

284. Caps and Cross Flowers.

Likewise the apexes of the hip roofs and the points where the ridge tiles unite with the hip tiles rising in two lines, often received a special covering and prominent accenting. In describing metal roofs, reference was made to wind vanes, which were made of lead or copper and turned around a vertical iron rod, which was often richly ornamented at its lower part. These likewise frequently found employment at such places on tile roofs. These terminations were mostly arranged in such wise, that a weak and diminished wooden pole had a round or polygonal cap, and the whole was covered by sheet metal, copper or lead. Ornamentation was then rarely and sparingly used, rather in the form of a little crown instead of the simple cap; the carefully graduated outline was mostly left to have its own effect, or there was also set on the cap

an iron rod as the support of a wind vane. A characteristic example from Kayserberg in Alsace is given in Fig. 359. For tile roofs, such terminals were made of burned clay, and then were regularly glazed in varied colors. From Prussian churches came the examples in Figs. 360 to 363, all remarkable in that their basal forms were made on the potter's wheel, then brought into the final form by easy hand work. Even the rich, with the effect of a graceful cross flower, middle portion of crown of S. Catherine in Danzig was produced from a basal form like a bowl by skilfully cutting away certain parts and adding knob-like projections, which reproduce the curves of the cross flower by means of pottery. Considerably more expensive were French crosses of this kind, made by the aid of the sculptor. We give in Fig. 364 a terminal from the Bishop's Museum at Troyes.²⁶⁵ It is glazed in different colors and apparently belongs to the 13 th century. The upper part is perforated, so that one might take it to be a chimney cap. It is naturally composed of several pieces. From the 15 th century dates a terminal likewise composed of several parts, which Viollet-le-Duc published as found in Villeneuve-l'Archeveque. (Fig. 365²⁶⁵).

Note 364. From my own drawing.

Note 365. From Viollet-le-Duc. Vol. 5. p. 274, 277.

303 285. Chimney Caps.

Similarly to these small accessories, the chimney caps finally contribute to the appearance of the roof. certainly very few complete examples have remained till our time, at least in Germany. Many of those contained in the corresponding publications can pass only for free restorations. But the charming chimney cap, that crowns the chimney flue of the Fröhmsenhaus in the Monastery of Maulbronn (Fig. 366²⁶⁴) in the form of a graceful turret with a stone finial, shows however with what love men began to develop these architectural parts already in the beginning of the 13 th century. Similar and still more richly treated examples were published from Puy-en-Velay and S. Lo by Viollet-le-Duc.²⁶⁵ On the Rhine and the Moselle, when chimneys rose from the external wall or the gable of the building, men liked to carry down a projecting band, and at a certain height to stop this on a corbel of some

kind. See the representation of the Foundation of S. Gereon at Cologne, given in Art. 223 (Fig. 262). If the chimney caps were very tall in general, then were attached to them additions on two sides like buttresses for strengthening them, as shown in Fig. 367²⁶⁴, from the Castle of the Elector of Mentz at Oberlahnstein. The upper termination then mostly remains without ornament and is composed of a simple cover slab or a steep slope. In other regions subdivided caps were placed on the chimney caps. Famous for this are the varied fanciful solutions on polygonal and circular plans, which besides other Italian cities, Venice in particular still presents above its roofs in accordance with ancient traditions. They serve at the same time to keep off rain and disturbing winds, as well as for decoration of the house, and Tyrolese art has apparently often influenced them. We give in Figs. 368 to 371²⁶⁷ a selection of forms collected there, and finally in Figs. 372²⁶⁸ and 373²⁶⁹ some caps from Oestrich and Kayzersberg, by which an extraordinarily rich effect was attained with relatively 304 simple means, plain tiles and stucco. With considerably greater expense, men in France and England also subdivided the shafts of chimney caps in brick or cut stone by vertically ascending mouldings, for which the chimney caps in Fig. 253 may serve as examples. Particularly on English castles of the 15th century, these attained an importance not reached elsewhere.

Note 266. Viollet-le-Duc. Vol. 3. p. 211, 212.

Note 267. From Mähring, B. Ein vernachlässigter Freund. Deutsch. Bauz. 1895. p. 448.

Note 268. From Luthmer, M. Bau- und Kunstdenkmäler des Rheingaus. Frankfurt-a-M. 1902. p. 232.

Note 269. From my own drawing.

b. Gables.

286. Gables in the View of a City.

As terminations of the great roof surfaces serve the tall gables in a monumental way, and in them is most strikingly expressed the high importance, which the roof possesses for mediaeval architecture. In the picturesque appearance of isolated buildings, the gable plays a most highly important part. Yet more imposing is its form on the city dwelling; for

in the countries, where generally the gable end of the house is turned toward the street, gables mostly adjoin, and they alone determine both the expression of the single house as well as the general view of the city. In the duration of such impressive rows of gables adjoining each other, time has certainly torn wanton gaps nearly everywhere. Only in a few cities may one still enjoy, as for example on the principal marketplace in Münster, how these gables combine in a united effect, each accenting its individuality, but freely arranging itself in the whole.

287. Gables in Half Timber Work.

Least naturally remains to us of the gables of the earliest time, and this is especially true of the gables of wooden construction, whose history for us begins only with the 14th century. The little house in Marburg, which we have represented in Fig. 139, is the oldest of its kind known to us, and exhibits such a plain gable, that we can assume entire simplicity for its predecessors. Of woodwork only so much is contained on it, as required for its construction; it substantially contributes to the clarity of effect, that the arrangement of the roof framework with its framed walls and plates was likewise carried out on the exterior. Like the other stories of the house, the gable projects beyond the story beneath; yet it rises without further projection in itself; The edge of the roof projects only very little beyond the gable; a projecting pair of rafters no longer exist; only the framework is not cut off quite flush with the gable, thus projecting slightly; outside is also nailed a verge board.

The same arrangement of the margin of the roof is also mostly found on the later German buildings; but on many structures the different stories of the gable also project with their plates beyond each other like the other stories, thereby producing a great abundance of forms, as well as by this a rich development of the streets and of window parapets. The upper part then indeed also has a cap or hipped surface, i.e., it is cut off, inclined and covered like the roof itself. As an indication of such a cap we may regard it, if for example as on the Butchers' Guild House at Hildesheim, the upper part of the gable is indeed vertical in height, but is lathed like

the roof and the vertical surface is covered with tiles or slates. Otherwise the upper portion of the gable occasionally differs from the lower, from the portion framed with vertical posts and horizontal girts, when it is filled by a uniform surface with timbers crossing each other in lozenge form.

288. Projecting Gables.

If a projecting pair of rafters terminate the gable at top, then is required a framework of the roof with purlins projecting beyond the gable, on which the rafters might rest, so that a pair of rafters also finds place before the gable, and the roof could project so far, that the gable received an effective protection from the effects of weather. The French house in Fig. 142 exhibits a similar form, where indeed only the plates of the uppermost story project and the gable remains in its plane. Then an arched construction is arranged before the house and under the projecting pair of rafters, that indeed conceals the function of the different timbers. For actually only the rafters are set against the plate, and the horizontal beam lying above the crown of the arch, in spite of its different cuttings, is a plate, and by its various tenonings or halvings with the pair of rafters, produces above a fixed triangle. The lower fastening of the extended angle of this fixed triangle, by the addition of the strut and of the impost of the arch projecting in the air, has become no better on the plate, than if the rafters were tenoned directly into the plate; meanwhile the arrangement holds, and thus we have little right to require more. Similar projecting gables are also found in the Netherlands, in Aix-la-Chapelle and on the Moselle, perhaps as shoots of French architectural influences.

289. Gables in Masonry Construction; Earlier plain Forms.

Far more varied is the form of the gable in masonry construction. It is natural to adopt the obvious, and to allow it to follow exactly the outline of the roof. There under simple conditions, a special termination upwards is not necessary; the covering of the roof can simply be extended over the masonry of the gable, as shown by the beautiful Romanesque gable of the Conversationshaus of the ~~Monastery~~ of Eberbach. (Fig. 374 ²⁷⁰). It is a plastered structure of split stone with c

cut stone portions, plain indeed, but very carefully executed. Likewise the upper ending of the gable is quite skilfully treated by a band of cut stone; the omission of a gable cornice is less to be referred to a lack of means, since the main cornice of the building extends beneath the gable in the same form as on the sides of the building. In the tasteless transition to the roof is rather expressed a particular mental tendency, that on many buildings remained in force until the close of the middle ages. The orderliness of the Renaissance period first required absolutely the enclosure of the tympanum by a cornice. In the greatest number of cases, this certainly existed also on Romanesque and Gothic gables. On many buildings it forms the only art form employed on them; thus 308 in the Romanesque time on the Frühmesserhaus and the Herrenrefektorium in Maulbronn. On others, as on the Refectory of the Monastery of Heilsbronn, on the Castle at Bidingen, etc., occur arched friezes, corbel ornaments, German bands or the like. More rarely is found the arrangement of rich ornamental windows in most small Romanesque inclined gables of secular architecture. Few more lavish subdivisions of the surfaces yet appear; rather is preserved the simplicity of the effect of the surfaces. But little is changed in the French Gothic in this respect. The cornices received the generally common form of the inclined wash, and the previously straight slab of the upper termination was made in the form of a slope inclined on both sides, as shown by Fig. 171. The edges of the gable were beset with crockets, and crowning by a cross-flower may have occasionally occurred. But in the treatment of the surface of the gable, men were very backward; the French secular gable remained plain with very rare exceptions, even above a richer architecture below it.

Note 270. From Schäfer, G. Die Abtei Eberbach im Mittelalter. Berlin. 1901.

290. Richer Subdivision of the Gable.

In Germany this condition rather forms an exception; on the contrary with us, men preferred to express the importance and richness of the building just in the ascending gable. Thus many gables are more imposing in height and dimensions than the lower part of the building, and not seldom an other-

otherwise entirely plain structure is enhanced by the luxuriant treatment of its gable to become a show piece of architecture. Frequently indeed then the gable area was regarded in the old way as a simple surface without direction, ornamental windows or sculptured ornaments of all kinds were freely inserted, or in the late Gothic period, it was uniformly covered by tracery in animated lines; yet another sort of development predominated. In harmony with the ascending outlines of the gable, were especially vertical divisions, that animated the surface of the gable in the form of blind arcades, tracery, or even as piers with greater projection.

Such a subdivision was then developed by the addition of tracery, shields of arms and other relief ornaments into great richness, but preferably so enhanced by adding a more powerful central motive. As such served a buttress extending a about to the apex of the gable, which was accented by a canopy and figure decorations, as on the abbot's house in Heilsbronn; but most of all by gable turrets, which in the most decided and richest development emphasized in the most effective manner the sharply aspiring vertical lines. The gable of the City Hall in Weissenburg on the Sand (Fig. 375 ²⁷¹) may be taken as an example of this. At the same time it shows how the force of the "upward tendency" is continued even above the ascending lines of the gable in the almost abruptly aspiring slender finial for the most effective animation of an otherwise entirely plain outline.

Note 271. From my own photograph.

Another means occasionally employed for heightening the effect of the gable was its combination with slender finial turrets, which rose from its ridge. Fig. 376, taken from the Court of Justice in Ghent, presents a beautiful example of this kind; more plainly, but with greater force is employed the same form idea on the Heiliggeist Hospital in Lübeck.

291. Stepped Gables.

An entirely different basis appears for the treatment of the surfaces of the gables, when they are not bordered by inclined lines corresponding to those of the roof, but rise in rectangular steps. These stepped gables may have arisen in regions with quarried stone, from the endeavor to avoid the

gable slopes, which are only durably constructed of plain cut stone; the dignified accenting of the masses resulting from its form, the daring strength expressed in it, there made it a particular favorite in north Germany. On the earliest examples the steps were mostly large and wide; in the late time and especially in south Germany, men reduced them to the pleasing dimensions of less than 20 inches. At first and in the Romanesque period indeed, the surface of the gable was carelessly filled by real and blind windows (see the two houses from Cologne in Figs. 111 and 165); frequently even horizontal caps occur as borders of the individual steps, as on the houses in Stadthagen represented in Fig. 205, and on the brick gable of a house at Luneberg in Fig. 377. As a contrast to this strong accenting of horizontals, special small terminations were usually added to the wide steps; stone pyramids with free tops, as in Stadthagen, battlements or also finials, or each step terminated upward with an easily ornamented smaller blind gable. All these accessories served to animate the outline, as well as to enhance the great difference between the cross section of the roof and the gable, and this effect was even strengthened, if open tracery was inserted between these aspiring terminations, and generally being capped by the form of a half ^{oval} ogee arch, being thereby combined with the mass of the gable. The citizen's House from Lengo in Fig. 378 ²⁷² exhibits this very expressive solution in combination with an otherwise very plain gable.

Note 272. From my own photograph.

With these rich means for animating the margin of the gable was then combined on the richest examples the subdivision of the surfaces by aspiring blind work, when the projecting finials were carried down to the base of the gable. Thereby the splendid effect of the surface was intimately combined with the ornamental caps of the steps, and the highest plane of the impressive treatment of the gable was attained, as embodied in the Gith Hall in Münster. (See Fig. 217 as one of the finest examples).

292. Gables in Brickwork.

A very prominent part was further played by the great gables in brickwork, and they experience in this a quite peculiar

development. Fig. 377 already gives the impression of earnest strength, which is so well produced in this material. On other great examples this tendency was accented by the development of the vertical wall strips into bold octagonal piers, but on the other by the rich alternation of color, produced by the use of glazing and of plastered surfaces, as well as by the abundant ornamentation by graceful open tracery, rosettes, screen gables, an extremely pleasing and festal impression was produced. Fig. 379 ²⁷³ shows on a monastic building in Zinna, how far with relatively simple means was often carried the lightness of subdivision and the contrast with the lower surface of the wall; the gable end of the City Hall at Königsberg in the Newmark (Fig. 380 ²⁷⁴) may represent the splendid effect of the richer examples.

Note 273. From Adler, F. *Mittelalterliche Backsteinbauwerke des Preussischen Staates*. Vol. 2. Pl. 61. Berlin. 1862-95.

Note 274. From the same. Pl. 111.

An unusual wealth of artistic gradations lies in these solutions between the graceful play of light forms and the weighty earnestness of arrangements of massive piers, as most characteristically represented on the citizen's Houses in Greifswald and Wismar, valuable materials for thorough studies. We must unfortunately here restrict ourselves to the brief indications already given.

3/2

II. Development of the Interior.

Chapter 3. Wooden Ceilings and their Supports.

293. Beam Ceilings of the larger Halls.

As monumental domestic architecture commenced with the erection of festal halls, these likewise in the entire middle ages form the basis for the richer internal treatment. The development of the latter may be continuously followed, and what was worked out therein then surpasses the at first extremely simply treated actual living rooms.

Naturally there have remained to us from the earliest hall structures only descriptions filled with the enthusiastic praises, which with difficulty ^{are} estimated at their absolute practical value. We shall have to judge of these high assertions by the contrast with such simple conditions in other respects, but may assume for them in any case, that the buildings were chiefly finished by painting, and that they had wooden ceilings. It is stated that wooden ceilings also were for a very long time afterwards the most common mode of construction for most secular hall buildings. They already occur in the plainest construction, the squared beams remaining visible without any covering beneath, their surfaces hewn with the axe, only by the warm color tones and the peculiar surfaces of the structural material producing a clear and dignified, as well as a comfortable impression. Very commonly were they employed in this manner, so interesting by its modesty, in castles and city halls, when a layer of planks or timbers extended above the simple beams, so that the entire depth of the beams remained visible beneath. ²⁷⁵ The internal view of the Knights' Hall in Castle Schlegler at Heimsheim (Fig. 388) reproduces such a ceiling. For higher pretension, the joints of the ceiling planks were covered by battens, but particularly the angles of beams were changed by chamfers, coves or richer mouldings. The connection with the masonry was preferably so arranged, that a beam was placed as a wall beam on stone corbels next the wall, into which the beams were then gained. These wall beams were then usually ornamented by mouldings, and as a rule and without structural purpose, they also extended along the end walls before the beams. Figs. 381 to 383 show such an arrangement from the Castle at Cracow with the

peculiarity, that the intervals between the very closely spaced beams are not closed by transverse planks, but by longitudinal half timbers rebated in, and that between the beam ends are framed small blocks, which recall the mouldings of the beams. A further substantial enrichment is found on another ceiling of the same building, (Figs. 384 to 386), produced by richly moulded small cross beams instead of the joint battens previously mentioned, so that a division into coffer with it with the strongest effect is produced. These coffers are then closed by board framed panels as in cabinet-makers' work. The members of this ceiling have the considerable depth of fully 3.28 ft., in which they do not stand alone at all. The great dimensions of the wooden timbers here employed are based on the width of the hall, here amounting to about 26.3 ft. The fanciful effect of this massive treatment is yet enhanced by two strong girders, that without any clear necessity lie beneath the narrow lower beams and near the walls. The first assumption of a later addition becomes doubtful, because elsewhere, for example in the abbot's house at Lehnin, is repeated a similar arrangement, appearing to us illogical and evidently serving purposes of beauty.

Note 275. Such examples of mediaeval forms of ceilings are found in Schäfer, C. *Die Holzarchitektur Deutschlands*. Berlin. 1889 et seq.

294. Girders.

The form of the girders, which are here added more as free accessories of an artistic caprice, everywhere wins great importance for the appearance of beam ceilings, where on account of the width of the room to be spanned, or the weakness of timbers at command, support of the ceiling beams becomes necessary. Since they strongly affect the eye, they were specially treated, richly moulded or even decorated by carvings. We give in Fig. 387 ²⁷⁶ and on the adjacent Plate such a ceiling from a house in Eppan, where for a width of room of somewhat more than 19.7 ft., a strong girder is employed to bear the shallow beams. It is ornamented by rich coves and a carved bottom member in the form of a turned moulding, on the sides being very effective sunken ornamental work. At the support, it is strengthened by a wooden bracket cap beneath,

likewise richly treated.

Note 276. From drawings in the Wiener Bauhütte.

295. Ceiling Supports of Wood and of Stone.

If the width of the room were increased so much, that even girders alone could not bear the weight of the ceiling, these were then supported by wooden or stone isolated supports or posts. They for very long plans of halls very commonly resulted the arrangement of girders and rows of posts as preferable, and which extended lengthwise the hall, according to the width of the room being one in the middle, two or three, or indeed in four repetitions, as in the Kaufhaus at Constance. As a very characteristic example serves the Knights' Hall of Castle Schlegler at Heimsheim in Württemberg (Fig. 388²⁷⁷), whose ceiling is supported by three rows of heavy oaken supports. These isolated supports are of the simplest form there, and as usual have such dimensions, that the girders are strongly enclosed by their fork-shaped upper ends. A tenon left in the middle of this mortise then extends into the girder and ensures its immobility lengthwise. The posts here in pairs directly support the girders, partly by steep braces or also by bracket caps, which likewise extend through the upper part of the posts. Elsewhere these posts are indeed treated with great liking, and the number of beautiful solutions is extremely great. Thus Fig. 389²⁷⁸ reproduces a typical method of treatment from a connection in the ceiling of the Granary at Ulm, which with merely the expedients of the carpenter attains to a very clear and effective treatment of base, shaft and cap. The ceiling resting on this isolated support, besides the structurally necessary girders also has others extending in the same direction as the beams, only with regard to beauty. The advantage in extending beams on all four sides and afforded by this arrangement, has been ensured in other cases by placing similar braces as under the girder, also beneath the beams lying above the post, or to separate stiffening beams below the girder and extending in the same direction as the beams.

Note 277. From Paulus, E. Die Kunst- und Altertumsdenkmale im Königreich Württemberg. Neckarkreis. Stuttgart. 1889.

Note 278. From Schäfer, C. Die Holzarchitektur Deutschlands. Berlin. 1889 et seq.

With substantially greater expense the beautiful wooden post (Fig. 390) from the old Royal Palace at Munich is decorated by carvings. Another example of dry and powerful nature from the National Museum at Munich is added in Fig. 391. Others are given in the repeatedly mentioned work of Schäfer.

The fanciful decoration, at the same time poor in effect, of wooden supports by variously shaped chamfers and notching of the angles, as frequently common today as a heritage of the 19th century, does not correspond to the skilled artistic sense of the middle ages. Simple chamfers were only utilized for the formation of clearly octagonal shafts as in Fig. 390. If a richer effect were desired, then the shaft of the support was beset between base and capital on all sides by members easily formed with the narrow saw (Fig. 389), or were more lavishly treated by deeply sunken carved work. (Figs. 390, 391). The chamfering of the shaft here mentioned is often found connected with its reduction to a slender octagonal support, or with richer ornamentation.

Besides the wooden posts, although more rarely, we also find stone columns for supporting the ceiling girders. Likewise these braces are also occasionally connected with these, as on the late Romanesque wall posts of the Imperial Palace at Goslar, (Fig. 392 279), whose braces were renewed in the 15th century, and as may be seen on the plainly beautiful isolated piers of the Kaufhaus and City hall at Coblenz. Otherwise men preferred such simple expedients, as appear on the fine sandstone column of the Abbot's house at Maulbronn. (Fig. 393).

Note 279. From Die Kunstdenkmäler der Provinz Hannover. II. Reg. Bez. Hildesheim. 1 & 2. Stadt Goslar. Hannover. 1901.

296. Sheathed and Paneled Wooden Ceilings.

Besides the development of beam ceilings based on working ideas, which we have pursued in the preceding, there occurs a different tendency, which lays less stress on emphasizing a structural necessity. Not always, and especially not in small and low interiors, could men employ the large timbers; for it was next to cover these by a flat surface. For this purpose indeed, the entire spaces were filled with loam on sticks, so that the beams were flush with these surfaces, or were even covered with plaster like those. In better constr-

construction, such a lower surface was covered by wooden sheathing. In the simplest case, this sheathing is "lapped", i. e., each alternate board -- generally with moulded edges -- is laid on the boards next it at each side. Such ceilings were mostly decorated by alternating bands of animated painting. The ceiling from Castle Reiffenstein in the Tyrol (Fig. 394 ²⁸⁰) may personify the effect, although differently constructed by the insertion of longitudinal boards into grooves in the slender beams. More ornamental becomes such a sheathing, if the boards are placed beside each other and the joints are covered by battens. These frequently take the form of small beams of semicircular section of 3.2 to 5.1 ins. diameter, which at the ends as also indeed in the middle, pass into the rectangular form; at these places they are quite thin, and then again permit the entire ceiling to be covered by painting, as this occurred in the 15 th century in a room in the Castle at Nuremberg. (Fig. 395 ²⁸¹).

Note 280. From Paukert, F. *Die Zimmer-Gotik in Deutsch-Tirol*. Leipzig. N. D.

Note 281. From Heideloff, C. *Die Ornamentik des Mittelalters*. Nuremberg. 1844-1852.

In very long rooms, in which the boards and battens could not extend from end to end in one piece, a transverse batten was inserted at the continuous joint of the boards, or a board treated like a band, these transverse divisions being also strengthened by several layers of moulded boards and battens. But also by the battens could be formed parallel or oblique squares, hexagons and other subdivisions of the panels, bands etc. If these members were deep enough, they could be fastened directly to the beams, then joining the paneling, receiving in mortises the dividing timbers. Finally appeared also carvings, especially rosettes for the intersections of the battens, bands, shields of arms and other ornamental work for the surfaces of the panels, all frequently further enhanced by rich painting and gilding. We give in Fig. 396 one of the costly ceilings from the so-called Golden Hall of Hohensalzburg, ²⁸² and in Fig. 397 the carved roof in the Jochel's Tower at Sterzing, ²⁸³ which latter in its uniform richness already feels the omission of the contrast of more quiet surfaces re-

required for the effect. Beautifully carved ceilings of this kind are found in the Bavarian National Museum at Munich; another from the Palace of the prince bishop of Augsburg at Füssen with carved figures has been published by Heideloff.²⁸⁴

Note 282. From Schmidt, O. Die Veste Hohensalzburg. Pl. 5. Vienna. 1896.

Note 283. From Paukert.

Note 284. Die Ornamentik des Mittelalters. Heft. 23. Pl. 7. Nuremberg. 1844-1852.

297. Wooden Ceilings of curved Form.

As a special variety of wooden ceilings are finally to be mentioned those, which assume the form of a tunnel vault. They are found in Germany, curved in segmental lines, not rarely in the late period, and for the mostly low rooms, they form an extremely beneficial upper termination. Their surfaces are treated like flat ceilings, i.e., they are subdivided by longitudinal beams or battens; on the principal axes are regularly strengthening arches, frequently resting on rich supports with carvings. Rooms up to about 19.7 ft. wide or even larger are spanned by them in their free swing, as in the old hall of the City Hall at Munich. In wider rooms supports are either set beneath the crown of the vault, as represented in Fig. 398 for the refectory of the Carthusian Monastery at Nuremberg, and as in richer equipment with carved work on the posts and transverse beams is shown by the winter refectory at Bebenhausen.

Very much more grandly are treated curved wooden ceilings in the Gothic rooms of French castles, when they were extended in the form of pointed vaults high to the roof. Fig. 399 gives from a drawing of Viollet-le-Duc²⁸⁵ a view of the vast hall possessed by the Castle of Courcy, a room not less than 52.5 ft. wide, 196.9 ft. long and 78.7 ft. high to the ridge of the ceiling. In Germany the hall of the City Hall at Nuremberg and the old citizens' hall of the City Hall at Mühlhausen in Thuringia form a weak imitation of those mighty halls, though with greatly reduced dimensions, corresponding to the generally inferior conditions of former Germany. The magnificent and richly constructed ceilings of this art extending to the roof in England have already been mentioned in another place. (Art. 75). Note 285. Viollet-le-Duc. Vol. 3. p. 255.

Chapter 9. Vaulted Interiors.

298. Monastic Interiors; chapter Halls.

Besides the halls furnished with wooden ceilings, vaulted rooms likewise play an important part, particularly in monastic architecture. Also in them it depends only upon the width of span and the boldness of the architect, whether the entire space is covered in one span, in one or two, or even as in the grand refectory of the Monastery of Georgenthal in Thuringia²⁸⁶, three rows of columns supported the vaults in several lines. A certain contemporary change indeed occurs, that at the beginning of the development in vaults of lower rooms, men did not yet possess the certainty of the later time, and therefore preferred a division into small bays. Thus the chapter halls of Romanesque monasteries, which have the tolerably constant dimensions of about 30 ft. square, are as a rule divided by 4 columns into 9 square bays. Their cross vaults are at first without ribs; the supports are also frequently severe and earnest in form, as in the chapter hall at Bronbach, one of the oldest in Germany. Elsewhere and especially in the Saxon monasteries, it was preferred to decorate these supports most charmingly on shafts and capitals, an example of which is given in Fig. 400²⁸⁷, from the chapter hall of the Monastery of S. Egidion at Brunswick, now arranged as a Museum room. The architectural form thus produced was then more fancifully and more strongly developed in the 13th century by the introduction of ribbed vaults. Excellent examples among others are the halls of the Cistercian foundation of Heiligkreuz and that at Romersdorf near Bonn, the latter, as well as that at Altenberg near Cologne, having great beauty of proportions. The like form was also decisive in the Gothic period for chapter halls by force of custom; rarely was employed the then secured ability for vaulting greater rooms; unusual is the lengthy form of hall in two aisles found in the Castle of the Order at Marienburg and in Maulbronn. (Fig. 13²⁸⁹).

Note 286. Denkmalspflege. 1906. p. 93.

Note 287. From Denkmalspflege. 1906. p. 91.

Note 288. From publications of Wiener Bauhütte.

Note 289. Similar, but with simple cross vaults in Fontenay. See Viollet-le-Duc. Vol. 1. p. 274.

Rather to the usual square plan adhered the chapter hall at Eberbach in the Rheingau, vaulted with a middle support (originated by the rebuilding of an earlier hall with nine bays), and at Zwettl in lower Austria. (Fig. 401 ²⁸⁸). The room is evidently again square and one column supports four cross vaults, that have projecting ribs, a proof that the arrangement before us already falls in the beginning of the 13 th century. Very peculiar is the treatment of the springing, where the placing of the 8 heavy ribs on the slender shaft of the column is perhaps somewhat detailed, but is done with very bold and attractive effect. Similar solutions in somewhat advanced forms are found in Schönau near Heidelberg and in Beberhausen; the accenting of the springing by strong corbellings of alternating forms is generally a frequently occurring tendency in the 13 th century.

299. Vaulted Halls.

As an expressed contrast to the severe solemnity of this monastic hall, we exhibit in Fig. 402 ²⁹⁰ a room of similar plan out of the developed Gothic period, from the Renneberg in upper Hesse. Here it is no longer sought to emphasize the opposition between support and burden; light and apparently independent spring the graceful coved ribs from the slender middle column without any capital. Deep window recesses, which irregularly admit light from different sides, strengthen the comfortable and entirely secular impression of the apartment, which is also undisturbed in its harmony by certain irregularities of plan and of the treatment of the vaults. As a distinguished counterpart may finally be reproduced here the noble hall (Fig. 403 ²⁹¹), that forms the summer refectory of the Grand Master in Marienburg. The beautiful proportions of the interior, the noble lightness, with which the granite middle support seems to bear the vaulting, the rich arrangement of the ribs of the vaults, together with the masterly arrangement of the abundant lighting, make the room a most wonderful show piece of mediaeval architecture, even in the bareness of its present internal equipment.

Note 290. From Bau- und Kunstdenkmäler von Hessen. Provinz Oberhessen. Kreis Biedingen. p. 263. Darmstadt. 1890.

Note 291. From drawings of the Messbildanstalt. (Survey).

For a more cheerful harmony than the chapter halls are also the assembly halls and refectories regularly designed in the cloisters. Frequently, as in the Monastery of Heilsbronn, in the Castle of the Order at Heilsberg, etc., a great vault extends over the entire width, but as a rule it is divided into two aisles by a row of supports. Occasionally are found such restricted proportions of rooms as that of the Monastery of Michaelstein in the Harz, or the laymen's refectory in Maulbronn and Bebenshausen; but as a rule the wealth of the monastery and its eminent rank finds conscious expression in these refectories. Thus the refectory at Schönan near Heidelberg, later transformed into a church, rises to a very free and light effect (Fig. 404 ²⁹²); still prouder and more festal appears the refectory at Maulbronn. (Fig. 14). It is covered by a cross vault with six compartments, so that both on the wall as on the row of isolated supports, thinner and stronger columns or wall corbels alternate with each other. In order to have all transverse arches reach equal heights in spite of the different spans, the narrower side arches have been very strongly stilted. Their springings are accented by a special impost in the form of a ring around the shaft.

Note 292. From Moller, G. *Denkmäler deutschen Baukunst*. Darmstadt. 1815-1832.

301. Halls at Noyon and at Marienberg.

In general also in these two-aisled vaulted rooms the endeavors of the later time tend to an always more slender effect. From France we give in Fig. 405 ²⁹³ a beautiful hall from the Cathedral Foundation at Noyon, an interior in which in a singular way with the noble ecclesiastical dignity of the hall harmonizes the plain fireplace, which indicates a use for secular living purposes. Of similar slenderness, but which by the absence of all impost mouldings is even enhanced in impression, is the wonderfully light hall of the summer refectory in Bebenhausen. But the grandest effect of this kind is produced by the magnificent hall of Marienberg. Fig. 406 ²⁹¹. The rich subdivisions of the star vaults unite here on the slender granite columns an entire bundle of similar vault ribs, which radiate fanlike to all sides, and by their rich play of lines and bold span have aroused the astonishment of laymen

When the cross of the little age, there ever, there
and the use of richer forms of variety, not only in the
rooms, but also in the light. Theoretically the same
place in late rooms the formal arrangement with the
the plane of variety, that the use of variety is
and with very small and simple as the so-called
various. We represented on the plate near the 100 the figure
contrast as related with the first variety room and the
first variety and decorative elements, they are very effe-
ctive by the peculiarity of their form, on the floor in the
cell-like components of the light elements and the
by the effect of light, which results from the light
ceiling. In the first room in the third story, we are con-
siderably and even more over 20 ft. in some were covered
by similar variety in form of a decorative effect. The
of with such as the form of the so-called variety
special effect. It is in general. A good example is the
decorative conversation hall created in the year 1925 in Man-
hattan, which is inserted between the second and the
eleventh stories (fig. 100). It is a hall about 20 ft.
high and 20 ft. wide, which is covered by a series of the
floor. It resembles a modern hall, which is very
of the same size, but it contains the decorative elements
existing naturally leading to the main hall.

100. Manhattan Hall of the
The hall is a series of stairs leading to the first floor
and second floor; the Manhattan Hall in the first floor
and second floor (see plate near page 88 and 89). The
hall, as well as the rest of the building, is a
series of stairs leading to the first floor and the
second floor. The hall is a series of stairs leading to the
first floor and the second floor. The hall is a series of stairs
leading to the first floor and the second floor. The hall is a
series of stairs leading to the first floor and the second floor.

and of wondering recognition of tradesmen at all times, and even when the Gothic style passed as barbaric, found the appreciation of the best of men.

Note 293. From my own photograph.

302. Richer Forms of Vaults of the Late Period.

With the close of the middle ages, there everywhere increased the use of richer forms of vaults, not only in smaller rooms, but also in larger halls. Particularly the Saxon castles in late Gothic are found equipped with the most developed plans of vaults, that are mostly executed without ribs, but with very small compartments as the so-called cellular vaults. We represented on the Plate near page 109 the Albrechtsburg at Meissen with its richly vaulted rooms and halls. Likewise without any decorative ornament, they are very effective by the peculiarity of their lines, by the depths in the cell-like compartments of the richly arranged star vaults and by the effects of light, which result from the deep window recesses. In the great room in the third story, we see contemporaneously how even rooms over 32.8 ft. in span were covered by single vaults in favor of a spacious effect. Such vaults of wide span in the rich forms of net or star vaults form a special pride of the 15th century. A good example is the beautiful conversation hall erected in the year 1495 in Maulbronn, which is inserted between the abbot's house and the cloister proper. (Fig. 407²⁹⁴). It is a hall about 19.7 ft. wide and 55.9 ft. long, which is covered by 6 bays of net vaults. It receives abundant light through the triple windows of the south side, and it contains the picturesquely enclosed winding stairway leading to the upper story.

Note 294. From Paulus, E. Die Cisterciensien Abtei von Maulbronn. P. 78. Stuttgart. 1890.

303. Wladislaw Hall at Prague.

Entirely outside the series stands perhaps the last mediaeval palace structure; the Wladislaw hall in the Palace at Prague (See Plate next page 332 and Fig. 408²⁹⁵), both for its magnitude, as well as the mode of its vaulting. It is a work of the master Benedikt Ries from Pisting in lower Austria, in which the Chechs liked to name Benesch of Laun, from his later residence in Bohemia. Approximating it in the spirited c

course of the lines and in the overcoming of the numerous difficulties, which resulted from the construction, indeed only of the noble hall, that occupies the projecting corner building in the Castle of Meissen. One may see in it indeed the direct ancestor of this hall, and thereby place it in the series of forms and ideas of the late gothic school of upper Saxony.

Note 295. From the publications of the Wiener Bauhütte.

At the Wladislaw hall the vault begins not very high above the floor, spans 52.6 ft., is arranged with axial lengths of 39.4 ft. and a height of 42.7 ft. to the bosses, and by the 33 ribs of the net vaults also forming circles on the plan, is subdivided with great charm and animation. The hall is 126.9 ft. long and is divided into 5 bays. In each bay is a great double window with stone cross between the wall piers. The impression of the hall is a very powerful one. The great dimensions of all details, as well as of the windows, contribute to heighten the grandeur of appearance. This hall likewise needs no further decoration to produce a grand effect, although master Benedict, when he created the work, certainly did not intend that such should be omitted.

304. Corridors and Lobbies.

To vaulted rooms also belong the connecting passages and lobbies, since they generally possessed an artistic treatment. We have repeatedly emphasized, that they possessed but small importance in the middle ages, and thus those with better treatment were quite rare at first. Gross vaults or richer forms in a later time also usually form their sole decoration. Only quite exceptionally, as in the lobby of the Grand Master's residence in Castle Marienberg, represented by Fig. 409 ²⁹¹, are they raised to higher rank by windows with tracery and a boldly conceived treatment of the supports.

305. Kitchens.

A special group among vaulted rooms is formed by the kitchens. The hearth with its fire became of old the centre of the house; as the gathering point of the family, it was the sacred symbol of domestic life, and house right of the free man, "his own hearth" became the expression for the entire house. Thus it remained under many conditions until today.

But the much closer relations, which the greater naturalness of life in the mediaeval kitchens and daily life produced, gave to these an importance, that extended far beyond the modern and was vividly expressed in the architectural monuments.

306. Kitchens in Monasteries and Castles.

Our inexhaustible source for the study of the architectural arrangements of the 19th century, the plan of S. Gall, shows us a square drawn in the midst of a series of buildings, which was sometimes designated as "focus" (hearth) or "locus foci" (place of the hearth). Therefore we may also indeed assume in the others, that the similarly drawn square or rectangle in the house of the ox or horse boys, that of the swineherd and others of the monastic community also were their hearths, on which they likewise prepared their food, as they warmed themselves, and if in the house of the groom benches are drawn around it, this shows that the people sitting around in this kitchen, which formed the principal room of the house, also ate their meals there. We indeed then have in that monastery a very considerable number of cooking places; for besides the proper kitchen of the monastery there is a formal kitchen also connected with a series of buildings, two of these in particular with the two divisions of the hospital at the eastern side, then in the house for receiving travelers (hospites); but we further find in all the different houses for all purposes of living, such hearths in the chief rooms. To these are further added the plan of the baths, to which a considerable development was assigned, after the Roman custom, and in each of these a hearth for heating water occupies the middle.

The principal kitchen of the monastery is arranged in a rectangular room lying near the refectory and connected with it ³³⁹by a passage, whose interrupted course indeed indicates, that it was furnished with two doors in order to not allow the odor of the kitchen to penetrate into the refectory; it is marked as the "passage to the kitchen". The kitchen shows 4 columns, connected by 4 beams or arches and supporting the chimney hood as a great vault. The square in the middle of the room is not designated as "hearth" (focus), but as "furnace" (fornax), perhaps evidence that it was not merely an open he-

hearth. Around this are drawn 4 rectangles between the columns, perhaps tables on which the food was prepared. Benches or tables extend around the hall. A passage connects this building with a second and larger rectangular one, which is divided into several rooms bearing the general inscription:—"here is prepared the food of the brothers with decent care", while separate inscriptions give the purpose of the different rooms, such as; "living room of the slaves, i.e., of the kitchen servants", "bakery of the brothers", "meal storehouse". Adjoining the bakery is the oven. The kitchen occupies the angle of the main building, and with its necessary rooms extends into the group of the houses of the hand-workers. One of the rooms with 4 columns, like the kitchen, is also here designated; "here is made the beer for the brothers".

With similar importance in the old plan of the Abbey of Canterbury (see Plate next page 26) are treated the kitchen and its subordinate rooms. The plan represents it as a detached domed structure crowned by a monumental chimney, in form similar to those presented by Viollet-le-Duc ²⁹⁶ in such grand examples from the Monasteries of Marmoutier, Vendome, etc. of the 12 th century. Such lavish arrangements, in which at the same time could be prepared on four or five hearths the food for the numerous multitude of inmates of the monastery, foreign guests, the poor and sick cared for by the monastery, naturally form exceptions and are not usually found in Germany; even for important designs, they were generally limited here to the construction of a single hearth. But during the entire middle ages the kitchens in monasteries and castles were treated architecturally with special attention. They were preferably arranged as airy and lofty rooms; the great hearth was covered by a hood for smoke placed on piers or stone isolated supports; preparing tables of stone and sinks were carefully provided. We give as an example of German development the kitchen of the Monastery of Ghorin (Fig. 410 ²⁹⁷), distinguished by the beautiful effect of the interior, in which the hearth extended into the room, free on three sides, now indeed with its round-arched opening walled up. Other kitchen plans of more modest dimensions with beautifully vaulted smoke hoods etc., are frequently to be found in German castles;

a good example from the castles of the Teutonic order of knights has been finely illustrated by Steinbrecht. ²⁹³.

Note 296. Viollet-le-Duc. Vol. 4. p. 461 et seq.

Note 297. From my own photograph.

Note 298. Steinbrecht, C. Preussen zur Zeit der Landmeister. Burg Lochstedt. p. 116, 117. Berlin. 1888.

307. Kitchens in City Houses.

Substantially otherwise was treated the arrangement of the house hearth in the city house. According to the customs of the earliest time for great and small persons, it here continues as actually the central point of the family, and as such finds its place in the great hall, the common living room, sometimes in the lower story, sometimes in the upper one, as the different customs required. A separate kitchen therefore did not exist in the mediaeval city house; only the later time by partitions and separations of varying kinds destroyed this close connection of house hearth and living room. We might also assume it as such a change in the later time, that in Cologne it became the custom to erect detached small kitchen buildings in the court, which were connected with the dining room in the house by a small passage. Similar conditions in Italy are indicated by the statement of Essenwein, how about the middle of the last century as a guest of the then bishop of Verona, he enjoyed an excellent meal in a hall, separated from the still mediaeval kitchen by a partition supported by marble columns, and how the table was so placed, that the eye of the master constantly rested on the hearth, and his butler from the table signaled to the kitchen servants, while the guests could enjoy the preparation of the food and the work done in the kitchen. It is to be hoped, that those beautiful kitchens still remain, with the mediaeval custom of dining in them! It is then stated, that in the bishop's house only actual festal meals were taken in the hall of the house.

Chapter 10. Domestic Chapels.

To mediaeval life the regular practice of devotion was as necessary as the daily bread. In the most modest house was a corner with the image of a saint, inviting to prayer, with a chapel in those of only the moderately great. This chapel was larger and more richly equipped, the more the owner was able to do this. In palaces and castles were often several, so many persons lived in the castle, which had its own quiet residence, and these required its own chapel. These domestic chapels occupy a special place in the history of architecture, and if they are also frequently dependent on church architecture and were developed with it, still again entirely peculiar conditions determine them, since as a rule they do not occupy separate buildings, but mostly are suitably placed in the midst of the other living rooms. Where they occupy a separate building, like a tower, as in many castles, other rooms are arranged above and beneath them, partly of an entirely secular kind, such as storerooms or platforms for defense against enemies. Sometimes the chapel is reduced to a little apse, added to a vestibule, corridor or stairway, where life often proceeds in an entirely secular manner. Fig. 113 gives such an example in the plan of the ducal residence at Meran.

The proper house chapels were indeed the rooms consecrated as places for the devotions of all or of certain occupants of the house; but they were not churches in a public sense; not all ecclesiastical ceremonies could be conducted in them, but only those which might occur anywhere; or those for which from time to time special permission was given for the acts thereby allowed, whereby indeed for this case they were declared a branch of the parish or bishop's church, authorized for the proceeding.

The number of chapels of this kind remaining to us is indeed great. In part must be counted here independent churches, of which we only know now, that once they had the purpose of the house chapel. Thus may have been particularly such buildings, which stand beside great churches, partly house chapels of bishop's palaces, of foundation houses and similar plans. Of the Minster at Aix-la-Chapelle as well as of the Church of S. Sophia at Constantinople, we know indeed, that they

were palace chapels. Yet such designs of this kind will not be treated here. Only such chapels will be mentioned, which are found in the interiors of buildings, that in general have only a secular purpose. There remain of these even a sufficient number, even if we exclude all those palace, castle and house chapels, that as independent buildings are incorporated in a greater arrangement, as for example the chapel of the K Kaiserburg at Eger, that of the Castle at Vayda-Hunyad (Fig. 70, Heft 1, 1 st edition), that of the City Hall at Cologne etc.

309. Chapels with small projecting Apses.

If we return to house chapels in a narrower sense, it is not possible to indicate the earliest of these chapels. The preceding Heft of this "Handbook" illustrates several castles, which date from the close of the 12 th century, in which such chapels occur. Thus the Trifels in Fig. 37 shows a projecting little apse on its tower, that belongs to the chapel, that appears in ground plan and elevation in Figs. 104 and 106; likewise Figs. 108 and 109 of that Heft make known the two sections of a chapel in the Castle tower at Friesach. It is surprising, that we cannot establish such in the Niederburg at Rüdesheim; it may have been in the part of the Castle no longer existing. The projecting small apse of Castle Landsberg (Fig. 70) must indeed have contained merely an altar in the hall of the palace. Quite similar as on these castles was a chapel of the Kamperhof in Cologne, ²⁹⁹, recently torn down.

Note 299. See Köln und seine Bauten etc. p. 80 (Fig. 59).

-- The chapel is also described by Reichensperger and illustrated in Bock, F. Rheinlands Baudenkmale des mittelalterliche Köln. Cologne.

310. Double Chapels.

All these chapels are vaulted, partly having but one and partly two cross vaults of important dimensions separated by a transverse arch; at the eastern side is a small apse. A later rebuilding in Friesach occurred; a great pointed window stands behind the altar, and it is not at all improbable, that in its place originally existed also such a little apse. The chapel of Trifels therefore was of particular importance, since in it were temporarily preserved the imperial insignia,

and in the anteroom furnished with a fireplace, the guardian priest had his dwelling. The chapel at Friesach still exhibits the remains of beautiful old mural paintings of the 13th century, as well as two doorways on the north side, which lead into the open air, thus formerly to a defensive gallery, externally constructed of wood. Accordingly the chapel had to contribute to the defense against an attack on the northern side, corresponding to the character of the entire tower.

337 A peculiar place is occupied by the chapel on the east of the palace of the Castle of Nuremberg. It is indeed placed in a separate building; but even if access to the lower chapel is assumed to have only been from the exterior and indeed outside the inner enclosure, its upper story still stands in direct connection with the hall of the palace structure, the manhood's hall, from which leads a formal portal to it, while from the upper hall, the judgment, government and festal hall, a doorway goes to a gallery, from which one might look down into the chapel and participate in the divine service. On the contrary, the apse then lies in a tower, whose upper story was indeed constructed otherwise than the lower portion, so far as it belonged to both chapels. If the position of this tower did not indicate, that such was previously necessary there for the defense of the castle, one would be justified in believing, that the entire construction only occurred later, and that the entire chapel with rectangular choir and without apse was among the independent structures. It is substantially unimportant in which separate class we place this chapel. It was distinguished as a "double chapel" by one of the later writers, and thus demands particular attention.

311. Chapels in Crusaders' Castles.

That the house chapels of the crusaders' buildings, particularly in those of the orders of knighthood, played an important part appears self-evident, so that occasionally the question again occurs, where such a building is properly classed. The Castle of Chastel-Blanc has a principal tower, whose entire ground story is occupied by a great chapel (Fig. 409³⁰⁰), whose considerable height produces the impression, that the entire structure is a chapel building; and yet the great height was only chosen for the reason, that the tower should

have the necessary height and the defensive platform be sufficiently elevated. Above the chapel is arranged a room in two aisles with cross vaults, which may well be regarded as a dormitory for the knights as a palace hall, since for example, it is larger than that at Nuregberg. Over it is then the defensive platform. Beneath the chapel lies the cistern. Also likewise the lower room of the Castle tower at Gible³⁰¹ may have served as a chapel, similarly to the vast main tower of the Castle of the Templars at Tortosa³⁰², whose magnificence was praised in the year 1211 by Wilbrand von Oldenburg. We might indeed judge from the massive slopes at the base, that the existing remains no longer belong to the tower seen by Wilbrand, but that the present structure was first erected in the 13th century, since the Templars then possessed their greatest splendor, and could hold Tortosa until the end of the 13th century, one of the last points they had to abandon in the East. In the Castle of Krak of the order of S. John, the chapel lies in a rectangular tower, that differs from the others by the slightly chamfered angles, and belongs to the inner line of defense. (See room H in Fig. 54 of the preceding Heft). In Castle Starkenberg of the Teutonic order it must also have been placed in the main tower. (See room D in Fig. 53 of the same Heft). The considerable size of all these chapels was connected with the great garrison on the one hand, and with the obligations of the knights on the other. But then everywhere may have been connected with these castle chapels the character of a parish church for the garrison, which did not occur in European castles. There the parish church generally lay outside the castle, if it were not within the outer enclosure, as at Nuremberg the Walpurgis Chapel was on the first terrace of the hill, at Friesach the Church of S. Peter, or the inhabitants of the castle belonged to the parish of the nearest village.

Note 300. From Rey, G. *Etude des monuments de l'Architecture militaire des Croises en Syrie et dans l'Ile de Chypre*. p. 85; Pl. 10. Paris. 1871.

Note 301. See Figs. 97 to 99 in the preceding Heft of this Handbook, 1st edition.

Note 302. See Fig. 51 in the same Heft.

Note 303. See Figs. 54, 55 in the same Heft.

312. Chapels in German City Halls.

If we omit so many other chapels, from which we gain nothing, and continue with the consideration of house chapels existing in Germany, we turn first to the little apses of the hall of the Nuremberg City Hall. It is unknown to us that a any other chapel may have been in the building. Thus in fact it is not surprising, and entirely corresponds to the before mentioned practice in many castle buildings, that this altar space was built in the hall, and which again by ancient tradition found its place in a projecting small apse. The simple apse (Fig. 224) with its slender form and slight projection on a simply located corbelling and with a stone roof is extremely plain in treatment of forms. This may appear singular for the wealthy city of Nuremberg, but finds its explanation in the generally plain conception of the structure externally, and its equals in so many plain chapel apses of castles and monasteries.

At Gologne City Hall we can conceive the original eastern side next the old marketplace, that of the 14 th century as similar to that of the eastern side of the hall of the Nuremberg City Hall. Perhaps the little apse was just as plain and simple as that at Nuremberg, since without motive certainly the rebuilding of the side toward the marketplace and of the little apse in the beginning of the 16 th century would not have occurred, and when the City Hall had long had its beautiful separate chapel, there was scarcely any reason for a new arrangement of an apse.

313. Chapels at Castle Karlstein.

Quite particular attention is deserved by the various chapels at Castle Karlstein in Bohemia, since evidently Karl IV twice rebuilt the entire castle. On page 138 of the preceding Heft (1 st edition), in Fig. 78 is given the plan of the castle, and reference is made to the peculiarity of the plan, the existence of two principal towers N and S. It is also stated, that the castle neither dominated nor protected the vicinity, that it must represent a sort of Castle of the Grail to preserve the treasures and insignia of the dignity of the emperor, who already was then king of Bohemia in the first place. Accordingly his treasures were grouped in two divisions;

the Bohemian royal treasure, as well as the relics and the insignia of the Holy Roman Empire, commanding such reverence as remained for the latter. These two treasures were placed in the chapels, and indeed we err not in assuming that the lower one N, which was connected with the dwelling of the emperor, contained the Bohemian royal treasure, the upper one S the Roman-German, which already according to estimation stood much higher, but still no longer properly had any actual importance; for as king of Bohemia, Karl could permit the erection in the lower one, the Maria chapel in the first castle tower, of a collegiate foundation, that consisted of a dean, four canons and five choristers, thus of ten ecclesiastics, while the Holy Cross chapel in the upper castle tower retained the ideal but not precious privilege, that besides the dean of the Karlstein Maria chapel, only bishops might read the mass at its altar. It is also characteristic that besides the court of the castle only 20 soldiers and the 10 ecclesiastics formed the garrison, and that 22 tenants of the adjacent properties had to appear in case of danger for the defense of the castle. To the fact that the collegiate chapel was correspondingly endowed is it to be attributed, that it always remained in use as a church room, but that it must follow the change of taste of the time, and so lost its original equipment, and that the upper stories of the tower having been removed, this no longer retained that character, while the upper or Holy Cross chapel became unimportant, since about 70 years after the erection of the castle, Sigismund gave to the imperial insignia another fixed home, and it remained in the ancient condition, as Karl furnished it in the middle of the 14th century. -- But also a third chapel is still found in the castle, the particular place for the domestic devotions of the emperor.

314. Chapels in the City Hall and in the Karolinum at Prague.

Of salient importance is again the chapel in the City Hall at Prague, an oblong aisle adjoining a larger room, and with three cross vaults in width and one in depth, attached to it being a small choir with 5 sides and 5 Gothic windows and the usual apsidal vaults, which externally was supported by a rec-

rectangular pier and supported on corbelling, thus continuing the old tradition of these little apses.

Also a second similar one of quite considerable dimensions is found in the Karolinam at Prague, an entirely modernized building, of which only now remains the mediaeval apse of the house chapel.

315. Chapels on Nuremberg Houses etc.

Already in Art. 120 was mentioned the little apse found in the Schlüssselfelder House at Nuremberg, a room with horizontal ceiling, that indeed formed the festal hall of the house, and has at its eastern side on a corbelling the little apse between two windows with tracery, to be seen in Fig. 127, and which till relently bore an ecclesiastical character in the pointed windows. These pointed windows have been transformed in our time into those with horizontal lintels; but aside from the fact that Heideloff still saw them, one can also now recognize and see their outlines, even if all joints are not freshly tinted and painted. The little apse rests on an extremely graceful corbelling, has relief ornament on the window parapets with a lantern on the apex of the roof, in which could be placed an ever-burning light from the living room above it, which served as a dead light for the cemetery of the Church of S. Lorenz.

Still remaining in Nuremberg is the apse of the house chapel of the residence of the provost of S. Sebald, that formerly served as the parsonage of the Church of S. Sebald. Today a living room adjoins it; a former chapel must have once existed. Likewise on the old parsonage of S. Lorenz a similar little apse was in the court, arranged toward the East, which after the removal of the building and its rebuilding by Heideloff, was again rebuilt on the north side, although somewhat changed, but still using the usable old portions. Among the great number of former house chapels of the 15 th century in Nuremberg we mention still only that, which was to be found on the corner house of the present Adlerstrasse and Hörmann's Alley, but which some decades since was removed and sold by the owner at that time, then being rebuilt on the Wartburg. Its walls were entirely paneled in the also described simple manner, and indeed each panel bore between two bands the ina-

image of a saint standing on a corbel. The ceiling was shaped like a tunnel vault and was painted blue with gold stars. The little apse projected into the court and was likewise built of wood, accordingly being furnished with a wooden vault.

In several houses of the city were smaller and partly vaulted house chapels, rooms with plan like a passage, without a special altar space. Similar vaulted and non-vaulted chapels existed and are still to be found elsewhere, as in Regensburg, Amberg etc. Likewise our plan of the ducal House at Meran (Fig. 113) and that of the Ehinger House at Ulm show the locations of the ornamentally vaulted house chapels. (Fig. 120).

316. Chapel at Cologne.

Peculiar to all examples previously mentioned is determinative the direction toward the East. This eastward direction however could not be maintained everywhere for the entire chapel; men did not hesitate to place the altar at the longer side, so that the priest standing at the altar could face the East while reading the mass. Thus the frequently cited work, "Köln und seine Bauten" etc. (Cologne, 1883) gives in Fig. 84 the interior of the chapel of the Schiederich House, where the altar stands in a recess at the end of the longer side, and not at the rear of the elongated room.

317. Chapels at Perchtoldsdorf etc.

In the tower at Perchtoldsdorf near Vienna,³⁰⁴ the second story is arranged as a chapel, furnished with abundant service recesses in the corners, from which rises a star vault as the ceiling of the rectangular room. A rectangular niche in the eastern wall is covered by a netted vault and has a small gothic window in two divisions with tracery, and serves to receive the altar. An external entrance leads to the second story, thus to the chapel, through which one must pass to reach a winding stairway in its corner, extending to an upper story of living rooms in the tower. The painted cross of consecration shows, that this chapel was ecclesiastically dedicated according to rule, which must have occurred only for very few house chapels.

Note 304. See Plate next p. 189 in the preceding Heft of this Handbook, 1st edition.

Then we further wish to mention the house chapel of the ab-

abbot's dwelling at Maulbronn, since there the little apse is not palaced at the East, but at the North. Yet the altar could so stand at the side, so that it had the eastward direction, as it was once the ecclesiastical rule for every altar, even if it was not everywhere obeyed after the close of the middle ages.

318. Chapel in College Jagellonicum.

We close the consideration of domestic chapels by referring again to the Plate next page 206, where appears the little apse of the hall of the College Jagellonicum at Cracow, whose simple form spares further description.

Chapter 11. Internal Stairways.

319. Original Lack of Ornament and Pretense.

As already stated for external stairs, men regarded stairways in the early middle ages as a means of ascent, just like a ladder. Scarcely any requirements for their convenience were established; they were never considered as an architecturally important portion of the building, that was to be especially treated in respect to space; men sought to occupy only the least possible space by them. Only in later times came to be applied to these small structures special care in arrangement and also great ornamentation in execution.

342 Very modest and quite inaccessible according to our ideas are the stairways of most castles, which mostly ascend in the smallest dimensions within the thick walls, in case for reasons of safety, men were not mainly satisfied with ladders. Thus in the interior of the imperial Castle of Trifels exist two stairways leading to the second story, in straight flights, though indeed broken at the corners, but a similar one to the third story is not to be found. Similarly unimportant in dimensions are also the stairways in the Niederburg at Rudesheim (Figs. 76, 77); in its tower is further found a winding stairway of masonry. We also see such in the almost contemporary Castles of Landskron, Neuscharfneck (see p. 176, 177 of the preceding Heft. 1st edition). Equally unimportant are likewise the stairway designs in the old Castle of Marienberg from the 14th century, where the knights still resided in considerable numbers, and where it might be important in certain cases for them to quickly assemble in the court, to be able to ascend to, or descend rapidly from, the defensive works at the edges of the roofs. There existed only two narrow stairways at A and B (see p. 182 of the preceding Heft, 1st edition), each being only about 3.28 ft. wide. Likewise in the residence of the Grand Master the arrangement of the stairs is very modest. A straight stairway connected the dwelling of the Grand Master with the refectory; two winding stairways in the masonry, scarcely lighted by occasional slits, conducted upwards the Grand Master and his guests, as well as to the defensive galleries.

We likewise find at Castle Vayda-Hunyad (see p. 140 of the same) only winding stairways employed as communications. Th

Their execution in all earlier buildings is the simplest conceivable, and the space thereby occupied is very small.

320. More expensive Designs of the late Period; Winding and Straight Stairways of Stone.

Only in the 15 th century did the stairways become in a manner more extensive. The Hohenbourg in Alsace has in its palace a winding staircase of more than 9.8 ft. clear diameter, besides other stairways of considerable importance in two other buildings. Likewise in the city houses the stairways became more important at about that time. The wooden winding stairs, that led upward into the halls, are mostly spacious and in consequence are less steep, while those with straight flights are also still quite steep. These straight stairways are also generally arranged, so that a flight above another in the same plane does not lead from story to story, as is the case in the Nuremberg house (see Plate next page 38). (For example, see the stairway arrangement in the Schweizer House at Neustadt-on-Orla in Fig. 175.).

Thus in the University at Cracow (see Plate next p. 206), the stairway from the court to the second story intersects the gallery at d; but two stairways at e and f further lead to the third story. The stairways in the Castle at Trient (Fig. 97), which are placed in the galleries surrounding the court B, lead to another place in each story. Likewise the stairways in the House at Steyr (Figs. 191, 192) do not lead upward directly above each other. There are indeed not wanting straight stairways that lay claim to being actually enclosed rooms. But as a rule, they are so arranged, that each flight lies by itself between enclosing walls, whereby most lack all possibility of architectural treatment, with the exception of vaulted ceilings and rich forms of windows. Unusual is the beautiful arrangement in the House at Steyr just mentioned, where the stairway to the attic is only separated by a thin lattice of stone posts and tracery from a vestibule, beside which it extends upward. More commonly already occur in Tyrolese castles developments of the kind represented in Fig. 412 ³⁰⁵, where the stairway with stone railing is partly built open in the great hall.

Note 305. From Schmidt, O. Die Kunstschatze Tirols. Pl. 38. Vienna. N. D.

For saving space, as before mentioned, winding stairs were especially preferred in citadels and castles, and they frequently form a certain substitute for the lacking connecting passages and corridors. They were particularly adapted for arranging concealed and private stairways, or such that merely led from one room to that lying over it, thus being inaccessible to every one not admitted to the room. Thus in the City Hall at Nuremberg the stairway is worthy of note, which led from the council room to the prison and the subterranean passages, and is itself invisible in the (still existing) council room, since the entrance is concealed by a wall case. Similar arrangements are also proved in other city halls, for example in Ochsenfurt, Goslar etc. A charming little stairway, built by Behaim in the first years of the 16th century in Nuremberg, also leads to the former archives, now office of the tester of weights and measures, from a vestibule up to two upper stories. It has the peculiarity that it turns around over its own course, and the exit in an opposed direction lies over the entrance. Our drawings in Fig. 413 make this intelligible.

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347 Generally in the later time the winding stairway afforded stonecutters the best opportunity to exhibit their art. If the newel had a diameter of only about 13.8 ins., such a rich group of rounds and hollows extended around it in a slender spiral, that it aroused the astonishment of laymen; likewise, since the moulding served at the same time as a handrail, a similar one was cut in the enclosing wall. The windows in this wall followed the slope of the winding, and if they had a rich architecture and perhaps stood quite near each other, then resulted stonecutter's art works of every kind. The edges of the steps might be curved inward or outward. The undersides of the steps might be moulded, or a single helical surface covered with ornaments might form the underside of all the steps. Vault ribs intersecting each other might decorate this surface or extend between the wall and the newel.

But if the inner cylinder of the staircase were so large, that an opening with a string was to be arranged instead of a newel in the middle, on which then stood three or more slender columns for supporting the upper part of the string, then

resulted a very ornamental and rich internal view, that reached its climax when the staircase to the top story was covered by a beautiful star vault. The surface of the enclosing wall, as well as the spaces between the small columns on the string presented in the railing obliquely ascending surfaces, which were suited for the designing of rich tracery; in brief, the stonecutters could then abundantly exhibit their entire art in the solving of the most difficult geometrical intersections, as well as in the invention and artistic graduation of the most charming details. Thus they could create works in the smallest areas of 13.1 to 16.4 ft. in clear diameter, which were assured of permanent admiration. As a magnificent example of these late Gothic designs should be mentioned the main stairway of the Albrechtsburg at Meissen, whose plan has been reproduced in Fig. 102.

In Germany it was reserved to the 15 th century to enjoy the construction of such richly treated stairways. In France on the contrary, men had earlier attained thereto, and the great stairway erected by Charles VI in the second half of the 14 th century in the Louvre, already shows what a splendid development the winding stairway was capable of.

321. Wooden Stairways.

Of straight wooden stairways of the mediaeval period scarcely an artistically executed example has been preserved. But from examples of the early Renaissance it may be assumed, that already in the Gothic time besides the stairs with straight inclined timber strings was also developed the form of the superimposed steps; certainly not in the form common with notched timber strings, but earlier and more properly so constructed, that wooden timber steps rested at the sides on inclined supporting beams.

Likewise wooden winding stairs have no longer entirely come down to us in the developed treatment of form. But so many beautifully moulded newels and so many strings still afford evidence of the successful endeavors of joiners to not remain too far behind the art works of stonecutters.

Chapter 12. Internal Finish of Living Rooms.

322. Wall Treatment in Wooden Construction; Plank Walls.

Also in the internal finish of living rooms is the treatment of the wall of substantial importance. Most simply treated in wooden construction by the natural connection with proper construction. Usually wooden bearing partitions without masonry supports were employed to separate smaller rooms in such manner, that on a horizontal timber sill matched planks 3.2, to 3.9 ins. thick were set beside each other, their tops being again connected by a horizontal timber. From the portion of the wall beside the doorway in Fig. 414 ³⁰⁶ may be seen this method of construction. Already in the plainest style of work, if the planks were set to lap somewhat, like a boarded ceiling, and were beveled at the edges, there resulted such a clear orderliness of treatment, with a comfortable effect of the interior from the warm tone of the wooden surfaces. To produce greater richness the planks were rather set in the same plane and the joints were then covered by battens, which extended between the sill projecting like a base and the upper timber, or in case the latter were represented by a ceiling beam, were returned horizontally along this. When such a wall was also furnished with a middle girt for better stiffening it, and adjoined a part of the ceiling, a doorway was naturally added in it, as shown by Fig. 414 ³⁰⁶, from the City Hall in Asfeld in upper Hesse. The upper termination of the covering battens was then usually formed by a wider board, which then like a frieze was best ornamented by notched arches or continuous scroll ornament. From the covering battens then developed finally divisions by little columns with carved bases and capitals; particularly the tops were often richly treated by the addition of rich coverings. A show piece of this kind is presented by the council hall of the City Hall at Ueberlingen, from which we reproduce the upper termination of the wall in Fig. 415. The work was completed about the year 1494, and the master Jacob Ruess has connected with the luxuriant ornamental carved work a thoughtfully combined series of splendidly executed free figures, which represent the officials and dignitaries of the Holy German-Roman empire, together with small corbels adorned by shields of arms.

306. From Lehmgröbner, P. *Mittelalterliche Rathausbauten in Deutschland*. Pl. 26. Berlin. 1905.

323. Internal Paneled Walls.

Likewise for internal paneled walls, men loved to freely exhibit the proper jointing. The finished woodwork then either remained in its natural color, that gradually passed into a warm and soft brownish gray, or to it was given an animated and mostly dark red color, from which became strongly prominent the remaining light frescoed surface. Men were mostly satisfied by this fresh contrast; more rarely were added colored border lines beside the woodwork or ornaments painted on the panels, as in the middle passage of the dormitory in the Monastery of Bebenhausen, whose wall treatment we represent in Fig. 416 307.

Note 307. From Paulus, E. *Die Cisterzienser Abtei Bebenhausen*. Stuttgart. 1886-1887.

324. Stone Walls.

If stone walls consisted of regular ashlar, which certainly occurred only for prominent festal halls, received in the interior a treatment entirely similar to that on the exteriors of buildings. Here as there occasionally slight paintings and colored tinting of the separate members were applied directly to the stone. In case the lower portion of such walls was not covered by paneling as just described, it is to be assumed, that like also the plastered walls elsewhere, they were hung with tapestries on all festal occasions, thereby acquiring both rich decoration and comfort. In large and small tapestries, that were used for this purpose, there appears to have belonged a considerable abundance for the necessary equipment of each distinguished household. But far more commonly were the walls constructed of split stone or bricks, then always being covered by plastering. Numerous statements already from the earliest time prove to us, that men were accustomed to apply painting to these surfaces, and if possible, representations of figures from history and the heroic sagas. The earliest remains of such decorations preserved to us even date from the 13th century; they exhibit on a strongly colored lower portion of the wall simple outline drawings of knightly life, and restrict themselves to the use of the colors

everywhere at command, black, white, iron red and yellow ochre. ³⁰⁸

Note 308. On the earliest Gothic mural paintings, see Weber, P. Die Iweinbilder des XIII Jahrhundert im Hesselhof zu Schmalkalden. Zeits. für bild-Kunst. 1901.

325. Paintings.

The most important example of such painted decorations from the later time is found in Castle Runkelstein near Meran, where the rich banker Niklas Vintler caused to be painted about the year 1400 an entire series of apartments with richly colored fresco paintings, representations of hunting and tournaments, knightly sports and events from the sagas of the hero Wigalois, from Tristan and Isolde etc., in a style borrowed from Italian art. As a rare but very effective example, the figure decorations should also be mentioned here, which formerly adorned the principal room of the Dollinger House in Regensburg. The room indeed dated from the second half of the 13 th century, was relatively low, covered by four pointed cross vaults with broad ribs, that rested on a low pier standing somewhat outside the middle, and which supported the tower of the house. The window architecture no longer remained, but must have been painted. On the contrary, sculptures of great artistic and art-historical importance still remained, which represented mounted figures somewhat larger than life, which were modeled in the full round in stucco on the wall. They represented king Heinrich I, as well as the combat of an alleged knight Dollinger with a giant krako from the Hungarian army, that wallowed over Germany, until it was destroyed by Heinrich I on the Lech field. Sometime since in rebuilding the house with the great hall, the sculptures were removed and again erected in the Catholic Club House at Regensburg, although partly in plaster casts. An imitation is to be found in the National Museum at Munich as representative of that school of sculptors, which in the 13 th and 14 th centuries, in the city of Regensburg created a series of splendid works.

326. Mural Painting of an ornamental Kind in the Tyrol.

Under simpler conditions men were naturally satisfied with decorative ornament in mural painting, which gradually developed from the heavy ashlar and enclosed friezes of the Romanesque style to greater lightness and fluidity. Certain exam-

examples of this highly developed ornamental art are found scattered everywhere; they are mostly still preserved in Tyrolean castles, so long sequestered from the world. Very characteristic is a wall from Castle Breundsberg near Schwaz in the Tyrol, which we illustrate in Fig. 417³⁰⁹. Drawn with freedom, earthy green and reddish brown scrolls extend in great lines over the light surface of the plastering, together with conventionalized leaves and fruits; between these sport birds and other animals. More difficult is the scroll work on another wall of the same castle (Fig. 419³⁰⁹), which at the same time affords an example of the painted enclosure of a window.

Note 309. From Paukert, F. Die Zimmergotik in Deutschland und Tyrol. Leipzig. N. D.

By finer execution are distinguished the paintings of a room in Castle Reiffenstein near Sterzing (Fig. 418³⁰⁹), to which correspond similar and better preserved works in the domestic chapel in Castle Gravetsch near Klausen. The entire wall is there vividly colored in a tone of rather subdued Schweinfurt green; on this is painted extremely rich ornament of band-like foliage with black lines, shaded in the same manner and lighted with white. Fine cords are branched like roots in air, and run through the great scrolls in white colors; figure accessories and flowers are executed in bold colors and further enrich the work.

327. Mural Painting in Bebenhausen and Fritzlar.

A particularly rich mural painting of great refinement in execution is found in the refectory of the Monastery of Bebenhausen (Fig. 420³¹⁰). Finally to be reproduced here is further a small room from the Canons' Foundation of S. Peter at Fritzlar (Fig. 421³¹¹), to make apparent the general effect of such painted ornamentation. Above a low white dado first rises a wide portion of the wall in dark red, covered by white scrolls and terminated above by a broad band of the most ornamental tracery and painted shields of arms. The upper portion of the wall and the ceiling are substantially treated in the same manner, only with dark red ornaments on a white ground and a slight change in the leaf forms. For this purpose the plastering of the ceiling was also extended over the

beams in a thin layer; it has indeed now in the greatest part fallen from the surfaces of the wood, since this was only previously prepared for its reception by a slight hacking. All surfaces of the wall and ceiling show on the white ground scroll work outlined in black with red, and also in part green leaves and bunches of grapes of varying colors. Likewise the representation of the Crucifixion, that animates the end wall, is limited to the colors, yellow, red and gray, besides the black outlines. For the endeavor after the unity of the view of the entire interior, besides the treatment of the ceiling, it is characteristic, that the painting of the walls is carried quite uniformly also over the wooden door.

Note 310. From an original drawing by G. Loosen.

Note 311. From my own photograph.

328. Paneling of Walls; Division by Battens.

Greater comfort than by mere colored decoration was afforded by covering the walls with wooden paneling. We saw at the beginning of our description, that use was made of it already in the oldest palace structures of Châlemaigne and Heinrich I, and we can accordingly assume with certainty, that men continued faithful to this custom in the Romanesque era also. But nothing remains to us from these earlier works; our knowledge first begins with the works of the 14th century. In the simplest way such panelings are attached to the construction of the plank walls described in Art. 322; when vertical planks are inserted between base and frieze and battens are added to cover the joints. But freer arrangements were mostly employed. According to a kind frequently occurring in the Tyrol in particular, large divisions are arranged, so that several boards are glued to form larger panels, and thus are inserted between the wider divisions by bands. The wall of the so-called emperor's chamber of the House of the sovereign prince in Meran (Fig. 422 ³¹²) gives a work of a simple kind. Richer examples indeed subdivide the surfaces by more frequent recurrence of the dividing strips, as the wall paneling from Klössterle (Fig. 423 ³¹²) exhibits in connection with a wall bench and a very capricious form of the upper and lower ends of the panels. More common is the division of the surfaces by battens crossing at right angles, when commonly a lower portion

of the wall was separated as a high base, just as also preferred in painting. Such battens are frequently of plain profile and are then decorated by broad nail heads, or are richly treated, often indeed as the emperor's chamber in the Scheurl House at Nuremberg (Fig. 424 ³¹³), being adorned by friezes of woods inlaid in colors or with ornaments in low relief. The intermediate panels were also ornamented in important works. Thus in the surfaces of the wainscoting in the princes' hall at Coburg, great rosettes were inserted in inlaid work, (Fig. 425 ³¹³), and as an upper termination was added a perforated and sculptured ornamental frieze between the dividing battens. In the golden hall of the portress of Hohensalzburg (Fig. 426 ³¹⁴) are distributed large nail heads and alternating carved rosettes in great numbers; statuettes with canopies are placed before the dividing bands, and a rich frieze terminates the panel at top, as in the preceding example.

Note 312. From Paukert.

Note 313. From Heidehoff, G. Die Ornamentik des Mittelalters. Nuremberg. 1844-1852.

Note 314. From Schmidt, O. Die Veste Hohensalzburg. Pl. 4. Vienna. 1896.

329. Division into Panels with "Rolled Work".

In northern Germany it was more usual than this mode of execution, to divide the wainscoting into small rectangular panels, that were either constructed as doubled work by overlaid division strips, or were set in frames and panels. The latter method of treatment appears to have been the only one used in France. In contrast to the panelings in south Germany, these divisions into little panels usually do not extend over the entire wall, but are limited to their lower portion for about the height of a man. While the ground of the panel must remain flat in doubled work, or at most can be decorated by sunken or inlaid ornament, men liked to give the framed panels a relief on the surface. This consisted in the simplest case of a roof-shaped thickening at the middle, and then by added mouldings and fanciful notching of the upper and lower border lines assumed the form, which from a certain similarity to rolled and folded strips of parchment was designated as "parchment paneling" or "rolled work". One of the most im-

unpublished notes of this kind is contained in the *Trichostema* (Horn's Hall) in the City Hall at Münster--and as the rest was

by these columns and finally, ornamented on the panels by 1
faint outlines and relief work, and is crowned at top for 1
the entire width of a canopy, but the latter pantheons with
sculpture is made over and figures the entire. It now serves
top preserving, however, and therefore the two-panels of the
lines are located with high figures: the columns the same
the panels.

THE DOOR

Historically similar methods of working as for columns also
found employment in the woodwork of the doors -- instead of
well as external. A real difference between these did not
exist for the leaves of the doors; the adjustment of the two
was complete, and even if one piece of wood was covered by
for the frame of internal doors, which often happened. With
the greatest unknown, the internal doors were inserted in
the wooden partitions and windows, and almost all repres-
entations of windows at the same time allow information,
how the doors were of two plain doors or shut, sometimes
externally twisted. Examples of most external openings,
and better favored doors on the surface of the walls. The
elements of the doors as a rule were small and low, as one-
sidedly explained, one very much so the adjustment of a door-
opening extension. The leaves were often constructed as la-
vel door panels, both worked by inserted strips, or made
of rounded boards and sometimes. Their most serious con-
cern be animated by carefully treated from figures, for whit-
on the doors already given in illustration (fig. 44 to 49),
as well as those in fig. 127 and a silver door, may serve
as examples. The latter door is from the *Levensborg* palace,
and is made of wood with a silver door. The plain from
the door over the door proper.

important works of this kind is contained in the Friedenssall (Peace Hall) in the City Hall at Münster-i-W as the rear wall of the seats of the aldermen. On the framework it is beset by little columns and finials, ornamented on the panels by figure carvings and rolled work, and is crowned at top for its entire width by a canopy, but the later Renaissance wainscoting is built over and injures its effect. It now serves for preserving documents, and therefore its two-thirds at the sides are furnished with rich fixtures for opening the separate panels.

330. Doors; Doubled Work.

Entirely similar methods of working as for panelings also found employment in the woodwork of the doors -- internal as well as external. A real difference between these did not exist for the leaves of the doors; the agreement of the two was complete, also even if cut stone or bricks were chosen for the jambs of internal doors, which often happened. With the greatest unconcern, the internal doors were inserted in the wooden partitions and wainscoting, and almost all representations of wainscoting at the same time afford information, how the doors sometimes had plain board casings, sometimes luxuriously treated architraves of most ornamental carving, and formed favored points on the surfaces of the walls. The openings of the doorways as a rule were small and low, as previously emphasized, but very much to the advantage of a comfortable expression. The leaves were often constructed as large board panels, held together by inserted strips, or made of doubled boards set crosswise. Their smooth surfaces could then be animated by carefully treated iron fixtures, for which the doors already given in wainscotings (Figs. 422 to 426), as well as those in Fig. 427³¹⁵ at a larger scale, may serve as examples. The latter door is from the sovereign prince's House in Weran, and is furnished with rich forged strap hinges, a latch for fastening and a strong pull. The plain iron transverse bar for security naturally belongs to a later time. Very worthy of consideration as a monument of the masterly Tyrolese carver's art is also the finely modeled panel with arms, placed over the door proper.

Note 315. From Paukert.

Another frequently recurring treatment is shown by Fig. 428,³¹⁵ on a door from Castle Enn, where the second thickness of boards is limited to a broad enclosure of the inner surface, richly decorated by flat ornament with sunken ground. On the other doubled doors with simpler treatment of the boards appear vertical divisions, as for the plain door from the Country House at Youlgrave in Derbyshire (Fig. 429³¹⁹), or by crossed doubled boards and battens, panels of the most varied kinds are produced. In the late time are then occasionally developed therefrom divisions in ornamental tracery in curved lines, a mode of treatment less suited to the properties of wood, but which however has been carried to splendid effects.

Note 316. From Old Country Cottages. Special Number of The Studio. 1906-1907. p. 110.

331. Mortised Doors.

³¹⁷ For mortised doors, a simple example is given in Fig. 430³¹⁷ from Castle Anserweiler in Lorraine, on which the joining of the frame by tenons and pins, the mode of moulding, and especially the before mentioned thickening of the panels and the decoration by nails and its pull are visible. Richer is the door from a house in Abbeville (Fig. 431³¹⁸). The upper panels exhibit rolled work, enclosed by an inserted moulding; the lower ones are perforated in a most ornate form of tracery, to permit a view into the vestibule. Such perforations are also found in Germany, either as smaller and often only slit openings, or they extend over the entire surfaces of all panels, the finest example of which is presented by the magnificent door of the chapel in Castle Reiffenstein near Sterzing.

Note 317. From Schmitz, W. Der mittelalterliche Profanbau in Lothringia. Düsseldorf. N. D.

Note 318. From Viollet-le-Duc. Vol. 6. p. 372.

332. Painting of Woodwork in Internal Architecture.

It is still to be mentioned, that indeed in the greater number of cases the woodwork of the internal architecture retained its natural tone, though commonly with colored tinting of the ground for all carvings. Likewise the accenting of certain ornamental parts, as for example the panel of arms in Fig. 421 by the richest painting and gilding is connected with this. But in many cases, particularly for doors, strong color has

which and the others were raised from the ground to a view.

Of the opening of half a century or more in the year 1882.

1882. (Continued of previous.)

The floors in the middle were not nearly so costly, a

and only where no important whatever was required to

work, as in rooms, reception, and such places, where single

boards were nailed on the top of the beams. In other and

living rooms the most perfect finish of the floor of the first

the ages and elsewhere, and elsewhere, and elsewhere floors,

entirely covered of gypsum, except where in the country and

from the floor boards in the center was produced a layer of

loam, which was covered themselves gypsum and also repair, wh-

on the floor.

When understood how to construct the gypsum floor with special-

and qualities. Particularly the thickness and the slight warp-

ing have not the reason in the case with which they were pro-

duced. The layers of construction of the floor as well as a

one always found distinct, and the floor was essentially different-

ly. After the floor had been laid down a section and was set.

It was composed in the center and toward the edges with

smooth layers, whereby also the floor was covered in layers

and a layer. As a result of a layer of a half, a quarter, and a

half of a layer, and the floor was laid down in layers

of the floor, which it showed in the center, and toward the

edges for the thickness and a thickness of a layer. By a

the thickness of the floor was in the center and toward the

edges. In the thickness of the floor was in the center, and

toward the edges of the floor, it was laid down in layers

of a layer, and toward the edges of the floor, it was laid

down in a layer, and toward the edges of the floor, it was

laid down in a layer, and toward the edges of the floor, it

was laid down in a layer, and toward the edges of the floor,

it was laid down in a layer, and toward the edges of the

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the floor, it was laid down in a layer, and toward the edges

of the floor, it was laid down in a layer, and toward the

edges of the floor, it was laid down in a layer, and toward

been applied to the whole, then frequently the mouldings, carvings and fixtures were raised from the ground by a vivid contrast of colors. For this is then applicable, what was said of the painting of half timber structures in Art. 222.

333. Floors; Coating of Gypsum.

The floors in the middle ages were but rarely of boards, and this only where no importance whatever was assigned to them, as in attics, storerooms and such places, where simple boards were nailed on the tops of the beams. In halls and living rooms from the earliest times to the close of the middle ages and afterwards, men preferably used plaster floors, chiefly composed of gypsum, except where in the country and among the poor people in the cities was preferred a layer of loam, which men could themselves prepare and also repair, when injured.

Men understood how to prepare the gypsum layer with excellent qualities. Particularly the hardness and the slight wear must have had its reason in the care with which they were treated. The degree of calcination of the gypsum as well as the always equal quantity of water were essentially influential; after the mass had been uniformly applied and had set, it was compacted in its still wet condition by beating with smooth timbers, whereby also all commencing cracks in drying were closed. As additions are found sand, brickdust and small pieces of pounded tiles, but so that always the hardness of the gypsum, which it acquired by setting, remained most decisive for the durability and hardness of the floor. By the addition of pounded tiles it received a red and mottled appearance. In the Carthusian Monastery at Nuremberg, it covered the floors of all rooms; it was mixed with many fragments of tiles, so that it had nearly the color of terra cotta, and where it could be examined, it was laid in a single uniform layer of some 2.4 to 3.9 ins. thick on pure sand. It seems to have been strongly tamped, so that it was extremely compact. Then it appears to have been smoothed with the trowel; it lay very even, was subject to heavy use for several hundred years and produced much dust, so that unfortunately it could scarcely be allowed to remain anywhere, and men must be satisfied with procuring a few sample pieces. Likewise a

gypsum covering of a bluish gray color is occasionally found; it was produced by mixing particles of charcoal with the gypsum, either as an impurity from calcining or an intended addition. Gypsum floors in patterns, which resulted from inserting templates in a part of the floor to form holes, then filled with material of a different color, might indeed be employed in church architecture as well as in domestic architecture; yet no examples of these have remained to us.

334. Clay Tiles.

A method was also common for animating and at the same time ornamenting floors, and this found employment in rooms and halls during the entire middle ages, which consists in covering with tiles of burned clay, variously decorated by reliefs as well as by stamped outline sketches and by glazing in different colors. These are the same tiles, which also found such varied uses in church architecture. Therefore in order to not treat of them twice, since they were thoroughly described in Heft 4 of the preceding volume (in the details of church architecture), we refer our readers thereto. Such a floor covering, besides which also costly stone and marble slabs and mosaic were employed, was not only used on a bed of earth or on vaults, but even on a layer of beams. Our Fig. 389 shows how a layer of loam or sand was laid for them on a floor of boards.

335. Heating Apparatus; General.

To the internal architecture of buildings likewise belongs the heating apparatus. We have already emphasized in describing the general arrangement of mediaeval dwellings, that the ruder habits of mediaeval men did not require artificial heating to the modern extent. We have seen, that even prominent monasteries possessed only a single room, that could be warmed, the "warm room", that in important city halls in most cases no fireplace existed, excepting in the largest, in the house hearth burning in the draughty vestibule. One might indeed conjecture, that this lack was remedied by the abundant use of portable charcoal braziers, fireplaces etc. But whoever had opportunity to pass a winter in north Italy some 20 or 30 years since, knows how persons accustomed by established habits, likewise endure the period of winter frost without such assistance, and is inclined to attribute importance in

this respect also to the mediaeval man. Difference in countries certainly plays an important part in such customs. It may also be mentioned here, that apparently the German Alpine regions as well as Sweden and Norway already early paid greater attention to heating apparatus than was usual elsewhere, which is easily explained by the roughness and the longer duration of winter there.

But in general, the equipment with special heating arrangements remained exceptional and a privilege of the nobles; yet it does not exclude that they developed this in a quite varied and abundant manner. We can particularly distinguish between three principal forms:-- heating by hot air, by fireplaces, and by stoves.

336. Heating by Hot Air.

Heating with warmed air can certainly be referred to Roman precedents. In any case the heating arrangements, that the plan of S. Gall gives for the furnace, correspond to the hypocaust arrangement of the Romans, which is now regarded as heating by hot air, designed to be effected by the vertical flues lying in the walls an interchange of air between the room and the furnace room. The mode of action of such heating is indeed based on much simpler principles, compared with our present arrangements, and it approximates the action of the long known baking oven. Likewise the form was simplified in the later middle ages. A strong vault was placed under the room to be warmed, that partly served as a furnace, partly was filled with loosely packed large stones, furnished with a flue to carry off the smoke. By a strong fire the wall, ceiling and the stones in the room were heated to a glow, the fire was withdrawn and the smoke flue was closed. Small openings in the ceiling, which could be opened from the upper room, made it possible to utilize the heat stored in the furnace for warming the other. Arrangements of this kind are frequently preserved, as in the emperor's House in Goslar, at the Castle in Marburg, in the Castle of Marienburg,³¹⁹ in the Monastery of Maulbronn, in the City Halls at Göttingen,³²⁰ Lüneburg etc.; but these designs must scarcely have found wide dissemination.

Note 319. Published by Bergau in Zeits.f.Bauw. 1870.p.106

Note 320. Heyne, M. Die deutsche Wohnungswesen. p. 242. Leipzig. 1899.

337. Fireplaces.

As the most important arrangement for warming, the fireplace asserted itself in far more general use in the entire middle ages, as already stated, and was inherited from later antiquity. It must already have formed a constant part of the equipment for princely living rooms in even the earliest period of mediaeval domestic existence; otherwise the appellation of "chimney place" (*keminata*, *caminata*) could not have become so firmly settled for such. The first mention of such a "*caminata*" already dates from the year 584; the article itself therefore extends farther back. In the oldest representation of a mediaeval residence, the plan of S. Gall, in the corners of the better living rooms are found indicated very numerous heating arrangements, that are best explained as fireplaces.³²¹ This is indeed not the arrangement, which is designated on the plan itself by the word *caminus* (fireplace); this rather denotes the before mentioned heating by furnace (*calefactorium*), evidently from the distance between fireplace and smoke flue, an air-heating hypocaust according to Roman methods. What we regard as a fireplace, like the probably vaulted kitchen hearth (Art. 306), is in part designated by *fornax* (stove); it is very evident that these expressions do not here possess the fixed and limited sense, which we later find assigned to them.

Note 321. It should be mentioned, that others desire to recognize stoves in these indications; a decision on this must be difficult as well as of no great importance. The reason suggested by Heyne, that stoves can be built in wooden houses better than fireplaces, does not seem to hold good from a technical standpoint.

363 Moreover the construction of such a fireplace can be very simply stated; a hearth for the fire with any sort of a smoke hood, even of wattle coated with clay, would entirely satisfy the needs of simpler times. Likewise the stone fireplaces remaining to us from the 12th century often exhibit the plainest forms, as for example the fireplace from the Castle tower at Friesach in Fig. 432, and such simplicity in treatment

The first of these is the fact that the...
 the second is the fact that the...
 the third is the fact that the...

The first of these is the fact that the...
 the second is the fact that the...
 the third is the fact that the...
 the fourth is the fact that the...
 the fifth is the fact that the...
 the sixth is the fact that the...
 the seventh is the fact that the...
 the eighth is the fact that the...
 the ninth is the fact that the...
 the tenth is the fact that the...
 the eleventh is the fact that the...
 the twelfth is the fact that the...
 the thirteenth is the fact that the...
 the fourteenth is the fact that the...
 the fifteenth is the fact that the...
 the sixteenth is the fact that the...
 the seventeenth is the fact that the...
 the eighteenth is the fact that the...
 the nineteenth is the fact that the...
 the twentieth is the fact that the...

The first of these is the fact that the...
 the second is the fact that the...

The first of these is the fact that the...
 the second is the fact that the...
 the third is the fact that the...
 the fourth is the fact that the...
 the fifth is the fact that the...
 the sixth is the fact that the...
 the seventh is the fact that the...
 the eighth is the fact that the...
 the ninth is the fact that the...
 the tenth is the fact that the...

The first of these is the fact that the...
 the second is the fact that the...

is often due to obvious reasons in structures for defense and utility. On the other hand, the form of fireplace afforded the best opportunity for creating a splendid central point of the decoration in state rooms, or for lending dignity and comfortable richness to inferior and otherwise entirely plain rooms. In all times have been artistically treated with great care, both the properly structural parts of the fireplace, the corbels with supporting posts and the smoke hood, as well as the artistic equipment, the wrought andirons for receiving the logs of wood, the fire tongs and poker. On the adjacent Plate is given the fireplace wall from the lower hall of the Palace at Gelnhausen, where not only the corbels and columns, but also especially the rear wall of the seats beside the fireplace is covered in the richest manner with rich stonecutters' work, with decorated members, interlaced work and plant ornament. In the interwoven bands we again find the same forms, that were developed centuries earlier in the late Byzantine-Lombard period, and which were long retained in Italy. Later times continued the rich treatment of the fireplace in its ornamental forms with rich bands on the supporting beams of the fireplace hood with figures and also with rich blind tracery on the surface of the hood. Particularly the 15th century produced important show pieces of this kind, and by these works left behind a strong incitement to Renaissance art to very magnificent undertakings. We reproduced in Fig. 433 a simpler example from Castle Vayda-Hunyad as a representative of the usual treatment common in this later time. Plain is the fireplace from Goslar represented in Fig. 163.

338. Stoves of Masonry; Fire Pots.

Besides the fireplace, that did not exactly force its way into citizens' houses, there first appeared in German Alpine regions the stove as the source of heat, probably soon also spreading from thence in south Germany. It was also early known in Scandinavia in a very primitive form; but an influencing of one region by the other is therefore scarcely to be assumed, since it first penetrated later from the south into the adjacent north Germany.

Stoves as baking ovens and smelting furnaces for industrial purposes have naturally been in use since inconceivable times;

but it is beyond our knowledge, when these arrangements for internal heating were first employed for warming living rooms. Vestiges are found, that already occurred in the late period of the antique; it is very possible, that already in the time of the Lombard kingdom stoves for rooms were constructed, and that the author of the plan of S. Gall was acquainted with s stoves. In any case until the late period of the middle ages the stove retained the plainest form of the masonry baking oven, and the at first but timidly attempted introduction of this but clumsy heating arrangement was ~~derived~~ from the later general custom of firing stoves, not from the room to be warmed, but from the outside. In provincial regions and especially in the Tyrol, we still find today stoves built of stones and externally thinly plastered with lime, often in the low form of a chest with arched cover and occasionally decorated by mouldings. For more rapid transmission of heat, pots are placed here and there in the solid walls of the room to be heated, so that their bottoms alone form the separation of the gases of combustion from the room. Such pots are at first round; then are found those with tops bent into square form (Fig. 434³²²) in which are also shown the first vestiges of ornamentation in the form of a rosette stamped on the round bottom. First from this was developed the form of the proper square tiles with regularly raised edges, which made it possible without the help of solid masonry to construct the entire stoves with these in regular forms. For a long time the mediaeval tiles retained the strongly sunken and recessed form from the history of their origin.

Note 322. From a sketch by the author.

339. Tile Stoves.

Complete stoves, that are proved to belong to a definite time in the middle ages, first remain to us from the 15 th century; even usable representations, with certain information relating to the form and construction of stoves, also only preserved from the beginning of the 15 th century, but have not come to us now. Yet single tiles remain, which date from the early time of the 14 th century, perhaps even from the 13 th. In Figs. 435 to 438 are given some excavated at Castle Tannenberg in Hesse, destroyed in 1399, from the Museum at

Darmstadt, which may date from the beginning of the 14th century. They are shaped with a free hand like mugs, then cut into two parts, pressed on a form cut away for the front edge and variously glazed. It was possible in this way to produce a wall of considerable thickness and still affording a very good heating surface, when they were built up with clay into a round or square mass. The thin portions of this wall, the hollows of the recesses in the tiles were soon heated; the thick parts at the junction of two tiles long retained the heat, and since the stove was built large enough, they heated to correspond. In such manner were the tiles made until the close of the 15th century, and in the use of the tiles kept in stock, the masters allowed free play to their caprices. They built towers with projections and recessions, together with square, round, hexagonal and octagonal portions.

Fig. 439 gives a tile, which belonged to a stove in the Parsonage of S. Lorenz at Nuremberg, on which by several successive recessed rows of such tiles was built a spire. Fig. 440 shows a tile for producing a projection, and Fig. 441 is a crowning tile; both taken from a Nuremberg stove. From the Tyrol came the two tiles in Figs. 444 and 445, decorated by the arms of the Tyrol and of Austria. From a stove in the sacristy of S. Stephen's Church at Vienna was taken the tile represented in Fig. 446. From Wurtemberg, as shown by the horn and antlers, is the tile in Fig. 442, which served for the construction of a cavetto. The back of this tile (Fig. 443) very characteristically explains the construction of such stoves. The slender projection fixed the tile in the wall mass of the stove, and according to whether this projection was raised by placing bits of tile beneath it or was lowered, a base of cap projection could be represented by a row of such tiles. Variegated glazing of the tiles, mostly green but with others yellow and reddish brown, was already found on the Tannenberg and other older tiles. Varied mottled glazing of the separate tiles appears to have just appeared at the close of the 15th century. Of such entirely brightly colored tiles is constructed the small stove on a sandstone base represented in Fig. 447; it was in the City Hall at Ochsenfurt, and now stands in the Germanic Museum at Nuremberg. On it

369 is remarkable, that the tiles are no longer of niche form, but are flat, as also the case in part on the famous state stove in the golden hall of Hohensalzburg. We likewise reproduce this in Fig. 448 ³²³, since it exhibits the great wealth in design even better than the preceding one, that men employed on such subordinate articles of artistic equipment.

Note 323. From Schmidt.

IV. Lesser Architectural Works.

Chapter 13. Wells and Fountains.

340. Shafts of cisterns and Wells.

There yet remains a series of small ornamental structures for us to describe, whose purpose was connected with the life of the citizens. First are the wells. Very ancient is the arrangement of cisterns, where men were exclusively dependent on rain water, as well as the excavation of shafts to such a depth, as to collect therein not merely the rain water falling upon the earth, but also the water flowing underground and trickling from sand and stone. According to the quantity of water, that could and must be collected so as to hold out till the next rainy period, the cistern was ~~an enormous~~ extensive structure or excavation, which for coolness was preferably constructed under buildings like a cellar. They had an opening above like a shaft (Fig. 411). The water was drawn out through this. During the middle ages this was done by buckets, which were let down. Such well shafts with openings were everywhere in cities and villages ~~in open~~ open places and streets, as well as in the courts of the dwellings. A round or square curb surrounded the opening of the shaft. For the older wells, as they have remained in Italy and elsewhere, for example in Venice, these curbs are frequently decorated richly by ornaments and figures in sculptor's work, preferably treated in the form of great capitals of columns. There men simply lowered the bucket on a chain or rope with a free hand over the edge and drew it up again filled. We indeed have to assume, that this was not different from what it was in Italy. But this method had its inconveniences and difficulties; therefore men hit on the idea of erecting two pillars beside the well, connecting these by a wooden beam, suspending below the latter a pulley, over which ran one chain with two buckets, thus using one bucket as counterweight for the other, since these must have a certain weight in order to sink into the water. While the filled one was drawn up, the other passed down to be filled, thus also saving time. Such wells could be arranged in his own house by each but moderately well to do man, and such are also found in each large house, at least in the late middle ages, unless two neighbors combined to ar-

arrange a common well in the wall separating their grounds. (See the Plate next p. 162). Richer forms were also developed from this, when the wooden beam was replaced by a stone beam, for example as shown on a charming well from Montreal (Yonne)³²⁶. Likewise solutions with three supports and a richer superstructure occur. Finally the art smith took possession of the promising problem and constructed the support of the pulley like a portal, or ornamentally and charmingly in the form of a circular substructure of iron. An example from the Hospital in Beaune in Fig. 449³²⁴ is taken from Verdier and Cattois' frequently mentioned work.

Note 324. From Verdier and Cattois. *Architecture civile et domestique*. Pl. 1. Paris. 1855.

Note 325. From *Baudenkmäler der Stadt Braunschweig*. Brunswick. 1901.

Note 326. See Viollet-le-Duc. Vol. 7. p. 569.

341. Running Fountains.

But there had also been preserved the tradition from the Romans to enclose springs, conduct the water in pipes, and then to permit it to flow out at certain definite places, where running fountains were erected. Such flowing fountains are then found in public squares, in gardens, as well as in enclosed rooms, for example in the before mentioned fountain houses of the monasteries.

They gave opportunity for the erection of works, which in part have great artistic importance. Very much varied are the forms, that men found for the always similar problems. Soon were they niches in facing walls, from which the water spouted into a basin placed before it, such as we find in costly execution in Schwabisch-Hall. There a wall richly adorned by figures and niches forms the market fountain with several jets beside each other; before it is found a great rectangular water basin intended for watering animals; an unusually gracefully treated pillar column terminates the entire arrangement at the right, detached side. -- Massive vaulted porches were also frequently erected over the water basins, as at the famous Fonte Gaya in Siena. -- A very characteristic form from the year 1497 may be seen in Kuttentberg in Bohemia. There the nucleus of the fountain is formed by a massive det-

detached basin about 32.8 ft. diameter with side walls about 13.1 ft. high, ornamented by rich tracery and buttresses, evidently intended for storing a supply of water in a dry time or in case of siege. Around on its high base are then placed taps for drawing off the water. -- By far most commonly the design consists of a central shaft, around which lie one or more water basins. One of the oldest remaining in Germany is the Market Fountain in Goslar with two bronze bowls over each other, the middle portion richly constructed in cast lead and rising from a plain base like a tower. With these bowls over each other we find one of the most beautiful examples standing on the marketplace in Brunswick (Fig. 450 ³²⁵), also still from the 14 th century in its first half. Likewise the running fountain in the cloister of Maulbronn (Fig. 451), also still from the 14 th century, possesses three basins above each other (Fig. 49).-- In later times it was quite generally limited to one basin, which on each side afforded a sufficient supply of water for extinguishing fires; only the middle column was made as massive as possible with a rich finial with architectural and figure ornamentation. To this kind belong the Fountains at Basle, Ulm, Esslingen etc., which were erected in the 14 th century. Perhaps the most famous and also the grandest of all is the "Beautiful Fountain" erected at the close of the 14 th century on the market place in Nuremberg, a rich and architecturally treated pointed column 65.6 ft. high, whose magnificent effect was materially heightened by animated painting and gilding of the ornamental parts. (Fig. 452 ³²⁷).

Note 327. From a drawing by P. Ritter, text by R. Bergau in *Zeits. f. Bauw.* 1871. p. 217, 343; Pls. 44, 45.

Also on drawings, engravings and paintings, that remain to us from the middle ages, occur notable representations of fountains. Fig. 453 gives such an architecturally treated fountain, decorated by lions ejecting water, from a hand drawing washed in color in the Germanic Museum at Nuremberg, from the close of the 15 th century. It is designed in stone, the middle portion perhaps in bronze; yet after the mediaeval fashion, the drawing does not give the exact treatment of the forms. Meanwhile the skilful architect would eas-

draw it in the correct forms. The sheet bears the contemporary written designation; "the old beautiful fountain". But it cannot well with certainty be connected with that at Nuremberg bearing the same name.

The so-called mediaeval "House-Book", an illustrated manuscript in the possession of the princes of Waldburg-Wolfegg from the close of the 15th century, further contains on page 19 a and 24 b the two fountains represented in Figs. 454 and 455³²⁸, in two representations of gardens. The latter has a stone base, a basin not unlike a holy water stoup, but larger; according to the height of the figure appearing in the drawing, we have to assume for it a height of about 6.56 ft. The small figure that scourts the water upwards is thought to be of bronze, and a height of 3.28 ft. is assumed for it. On the contrary, we have to conceive the first fountain as somewhat smaller, perhaps 7.38 ft. high, but made of cast bronze, the three figures of children being only about 10 ins. high.

Note 328. Mittelalterliche Hausbuch. Illustrated manuscript of the 15th century. With a preface by Dr. A. Essenwein. Frankfurt-a-M. 1887.

316 Similar in dimensions is the small bronze fountain in S. Wolfgang (upper Austria), which is represented in Fig. 456³²⁹. Without the stone steps it has a total height of 9.5 ft.; lions' heads, as such usually are, together with other fanciful animals' heads, following the classical tradition, served through the entire middle ages as outlets, and also here pour water into the basin.

Note 329. From publications of Wiener Bauhütte.

Chapter 14. Memorial Pillars and Crosses.

342. Memorial Pillars.

Other little structures are formed by memorial pillars, w which were erected here and there on the streets and squares of cities, as well as on the country roads outside them, and many of which are preserved to us. They all agree in this, that they either recall a definite event or the importance of the place whereon they stand, making it clear to the passer. In the earliest time it appears to have been preferably a cross, that was placed occasionally on the capital of a column of greater or lesser height. Such a cross still s stands on the market place at Treves. Crosses were also erected on the streets of Paris toward S. Denis at which king Philip the Bold halted, when he bore on his own shoulders t the remains of his ancestor S. Louis to S. Denis.

Later with the development of the Gothic style, there appeared richly treated finial structures like towers, corresponding to the finials of the buttresses on the churches, in place of pillars. The cross flower, that crowned the whole, may then be regarded as the indication of the cross, earlier forming the principal part. Entirely in the sense of those buttress forms was added rich figure ornament. The most beautiful memorial pillar of such a kind, developed in the best proportions, is that near Godesberg and not far from Bonn, which is known under the name of Hochkreuz (high cross). O One may well assume, that it indicates the limit of the city domain. The same significance was likewise possessed by th- at memorial pillar, which under the name of the "Spinner at the Cross" stands near Wiener-Neustadt, a memorial pillar built on a plan with three sides, which belongs to the close of the 14 th century and perhaps extends even to the beginning of the 15 th century. The elevation on the adjacent P Plate (at a scale of 1 to 100) of the pillar is nearly 72.2 ft. high, and we give 5 horizontal sections in 4 planes, by which it may be seen how the architecture is developed upwards. -- The Zderal pillar in Brünn (Fig. 458 ³²⁹) is considerably smaller and simpler, but nowise beautiful in its upper solution.

343. Crosses.

343. Crosses.

But the cross retained itself its importance beside these architectural forms. Since men desired to consecrate the place by erecting it, because by the symbol greeted by every one, they had the greatest security that the place would not be disturbed, and that the memory of its significance should be permanently retained, as therefore were employed with the architectural forms figures of saints and representations from the life of Christ, to invite the offering of a prayer, so the cross continued in all times the most suitable form of the stone memorial. We give in Fig. 459 ³³⁰ one such from Belpech, which with its stepped base has a height of 17.6 ft., showing a crucifix group on the front and the Madonna on the rear.

Note 330. From Viollet-le-Duc. Vol. 4. p. 439. 1860.

344. Statues.

Besides the designation of border marks, for which the pillars previously treated served as public memorials, there were likewise stone memorials of a different kind. Great is the number of smaller pillars, after so many have disappeared, which are known under the name of "statues", "martyr crosses", and the like, in varied artistic treatment, but also as rude crosses sunk in the earth along the country roads. They mostly designate the places, where a misfortune occurred or a crime was committed, and were partly erected by the criminals as indications of the sin, or by those saved as tokens of gratitude to God, or by the relatives or friends of the unfortunate, to request for him the prayers of the passers. Aside from the wooden very temporary memorials, they are more or less simple stone pillars, which bear ~~ornamental~~ projections on one or more sides. These are either shaped as canopies, so that they receive a group of figures, or are furnished with a niche containing a single saint, or finally are adorned by reliefs on each side. The later Gothic was inexhaustible in the development of ever novel motives; the land of Franconia is particularly rich in these little memorials of popular art.

A special group of these monumental pillars is composed of the Roland columns, which according to a not entirely clear

379 predecessor in the 15 th century in the representation of play figures, that served as targets for lances, won importance as marks of city jurisdiction, and in Germany frequently stood before the city halls. In them the figure of the knight became more prominent in comparison with the architecture, than is the case for the small figures of saints on boundary columns or racks. The best known and probably the oldest of all is that at Bremen from the first half of the 15 th century, on which the architecture of the pillar itself is very mutilated; the littleness of the treatment shown by the canopy, which remains directly over the colossal figure, gives the scale at which we may conceive the upper end to have been developed. This must have been intended for a greater height of at least 19.7 ft., so that it is to be assumed, that the total height was little inferior to that of the Beautiful Fountain at Nuremberg.

345. Other Memorials of Rights.

If these Roland pillars are memorials of rights, then we have to mention still others. The absolute publicity of all proceedings of justice caused, that in many places, just as the open palace eventually became an enclosed hall, courts were held under the open sky. Such a place, where judgment was given in the open air, may have been the so-called king's seat at Rhense on the Rhine: an octagonal vaulted hall structure with an upper platform enclosed by a parapet, to which ascended a stairway, also of stone.

Another memorial of justice is the pillory, an example of which has already been mentioned: the Gothic stone column adorned by a canopy and at the angle of the market fountain at Schwabisch-Hall, which served for the exposure of criminals, and showed there the undeserved glorification by rich decorative architecture. A great number of these pillories or scourging columns remain from the middle ages, for example in Breslau, Posen etc.; but they are entirely of a simple character.

Final Considerations.

We have attempted in the preceding to give a survey of the rich domain of mediaeval domestic architecture; but we shall not conceal from ourselves, that the nature of the material

380 makes it more difficult than in other domains, to obtain a sufficient view from such a recapitulation. In our province, besides the great general tendencies, which we have endeavored to emphasize, the individualities of the countries and peoples, indeed those of certain owners of buildings influence the development incomparably more, than in church or defensive architecture. The result of this is an abundance of results and of tendencies, interlacing and intermingling with each other in details often complicated in a high degree, and which would require much more than the space at our command for a thorough treatment. Thus we have been compelled to limit ourselves everywhere to the mention of a few proofs and allusions, wherein for evident reasons the German development was particularly treated. It lies in the nature of such a presentation, that in its most examples must be preferred in the selection, by which characteristic contemporary tendencies may be illustrated. In addition thereto it should at least be stated here, that most mediaeval dwellings find their effect in simple proportions, and that in particular nothing was further from the nature of the mediaeval city architecture, than to distract attention from the great masses and lines by the heaping of ornament and of striking decorations. If occasionally on the quiet background of plain works was prominent a richer solution, the dignified as well as picturesque peculiarity of mediaeval secular architecture required this. To describe such effects connectedly lay outside the problem set for us. To learn to recognize them and also to penetrate into the infinite wealth of mediaeval domestic existence in some degree, besides the study of books, it is necessary to occupy one's self with the old buildings, and to realize their characteristics and their connection. We behold it as entirely an inartistic method, if it be attempted to represent art material of any kind, even the most modern, on the basis of theoretical studies or publications, without knowing their effects and mode of use from personal observation. And we believe that so much weakness in the modern practice of art, in particular the undeniable failures of the use of historical styles must be referred to ignorance of the mode of working in those earlier

times. So much the more is it for us at the close of our statement of an impartial personal study of the old works, to indicate them as the inexhaustible source of fresh artistic inspiration. It is an extremely rich and interesting domain, that lies before us in the works of mediaeval domestic architecture as still in great part a new land; no one will occupy himself with it without enjoyment, or without a artistic and scientific benefit. An introduction to the chief tendencies, basal for the understanding of connections, and not the presentation of pleasing models for imitation, is the purpose of the preceding work.

And in closing, may the hope be expressed, that our descriptions may thus give to many the impulse to more active participation in so many questions of an artistic, technical and scientific nature requiring further development, which everywhere obtrude themselves in the consideration of mediaeval domestic architecture.

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